

Mastering Aptitude REASONING

Teacher's Help Book (6-8)



Mastering Aptitude and REASONING



ANALOGY

- 1. In this question, first and second patterns have lines in opposite directions (up and down) so opposite of right is left (with dots at same location). So (c) is the correct option.
- In this question, the pattern involves successively dividing the shape into smaller 8 sections.
 Hence the missing figure would be option (a).
- In this question, the figure (a) is rotated to up then again rotated to down left so missing figure would be option (b).
 Hence, the correct answer is option (b).
- **4.** In this question, the missing figure would be (a). The pattern involve rotating the letter 180° clockwise in each step. M becomes W and T becomes L.

Hence, the correct answer is option (a).

- 5. In this question, missing figure would be option (a). The pattern appears to involve the movement of a shaded square and an arrow. The shaded square alternates between the top and bottom positions while the arrow rotates 180° clockwise. Hence, the correct answer is option (a).
- 6. In this question, if we follow the pattern of figure (a), (b) then the missing figure would be option (c).Hence, the correct answer is option (c).
- 7. In this question, the pattern involves rotate circle and have small circle inside partially shaded, so the missing figure would be option (d) in which triangle has rotated triangle partially shaded. Hence, the correct answer is option (d).
- 8. In this question, the missing figure would be option (a). The pattern involves having left half of given pattern. Hence, the correct answer is option (d).
- **9.** The missing figure would be option (b). The pattern involve the outer shape becoming the inner shape in the figures, and inner shape becomes outer shape.

Hence, the correct answer is option (b).

- In this question, the missing figure would be (d). The pattern involve rotation of the shape and shaded area. Hence, the correct answer is option (d).
- Just as newspaper is prepared in a press, cloth is manufactured in the mill. So, the answer is mill. Hence, the correct option is (c).
- **12.** The car is driven by a chauffeur, thus A jockey rides the horse. Hence, the correct option is (d).
- Wax is a substance that can be processed into grease. Similarly, milk is a substance that can be processed into curd. Hence, the correct option is (a).
- 14. A group of sheep is called a flock. And a group of cattle is called a herd. Hence, the correct option is (a).
- **15.** In cricket, the essential equipment is a bat and In hockey, the essential equipment is a stick. Hence, the correct option is (c).
- 16. Here $6 \times 3 = 18$. Similarly $4 \times 3 = 12$. Hence, the correct option is (a).
- **17.** The relation between 21 and 3 seems to be dividing 21 by 7.

 $21 \div 7 = 3$ Similarly, $700 \div 7 = 100$ Hence, the correct option is (c).

- **18.** $42:21 \rightarrow$ Here, 42 is divided by 2 to give 21. Similarly, $28 \div 2 = 14$ Hence, the correct option is (b).
- **19.** $14: 140 \rightarrow$ The relationship is that 14 is multiplied by 10 to give 140. $14 \times 10 = 140$ Similarly, $24 \times 10 = 240$

Hence, the correct option is (b).

- 20. 12:60 → The relationship is that 12 is multiplied by 5 to give 60. Similarly, 21 × 5 = 105 Hence, the correct option is (c).
- 21. 5000 : 500 → The relationship is that 5000 is divided by 10 to give 500.
 Similarly, 2000 ÷ 10 = 200
 Hence, the correct option is (a).
- 22. $7500: 7400 \rightarrow$ The difference between 7500 and 7400 is 100. Similarly, 4600 - 100 = 4500Hence, the correct option is (d).

- **23.** $7:56 \rightarrow$ The relationship is that 7 is multiplied by 8 to give 56. Similarly, $9 \times 8 = 72$ Hence, the correct option is (c).
- **24.** $63: 9 \rightarrow$ The relationship is that 63 is divided by 7 to give 9. Similarly, $84 \div 7 = 12$ Hence, the correct option is (c).
- **25.** $15:120 \rightarrow$ The relationship is that 15 is multiplied by 8 to give 120. Similarly, $22 \times 8 = 176$ Hence, the correct option is (d).
- **26.** In this question Malaria is a disease and a spear is a type of weapon. Hence, the correct option is (a).
- **27.** In this question Push and Pull are opposite actions. Similarly throw and pick are also opposite actions. Hence, the correct option is (b).
- In this question Import and Export are opposite or related terms in trade. Similarly Expenditure and Revenue are related financial terms. Hence, the correct option is (b).
- **29.** In this question Yeast is used to make bread. Similarly Bacteria are responsible for turning milk into curd. Hence, the correct option is (d).
- 30. In this question Peace and Chaos are opposites. Similarly Creation and Destruction are opposites as well. Hence, the correct option is (c).
- **31.** "Man" is a mammal, and a lizard is a type of reptile Hence, the correct option is (a).
- 32. In the given question, The pattern is based on reversing the order of the letters. In the first pair, "ABC" is reversed to form "XYZ". Similarly, for the second pair, "CBA" is reversed to form "ZYX" Hence, the correct option is (c).
- 33. In the given question,A battery has terminals, and a magnet has poles.Hence, the correct option is (b).

Hence, the correct option is (b).

- 34. In the given question,A paw is a part of a cat's body, and a hoof is a part of a horse's body.Hence, the correct option is (a).
- **35.** In the given question, Graham Bell is famously associated with the invention of the telephone, and Marie Curie is famously associated with the discovery of radioactivity.

- 36. The relationship between "Action" and "Reaction" is one of cause and effect. Similarly, "Attack" is often met with a "Defend" response. Hence, the correct option is (c).
- **37.** Provocation leads to anger, and a threat often leads to fear. Hence, the correct option is (a).
- **38.** A rose is a type of flower, and cricket is a type of sport. Hence, the correct option is (a).
- **39.** A cough is related to the throat, and asthma is related to the lungs. Hence, the correct option is (c).
- **40.** A speedometer measures speed, and an odometer measures distance. Hence, the correct option is (d).
- **41.** A cuboid having a rectangular base and a cone having a triangular base. Hence, the correct option is (b)
- **42.** lood and drought are opposites in terms of water availability. Similarly, "genius" and "idiot" are opposites in terms of intellectual ability. Hence, the correct option is (c).
- 43. "Long" and "Short" are opposites in terms of length, and "Old" and "Young" are opposites in terms of age. Hence, the correct option is (b).
- 44. Given,

CLOCK : BKNBJ

$C \rightarrow B$	(shifted by -1)
$L \rightarrow K$	(shifted by -1)
$O \rightarrow N$	(shifted by -1)
$C \rightarrow B$	(shifted by -1)
$K \rightarrow J$	(shifted by -1)

Similarly

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W \rightarrow V, A \rightarrow Z, T \rightarrow S, C \rightarrow B, H \rightarrow G
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Hence, the correct option is (a).

45. Given,

"HAND" \rightarrow "IBOE":

(shifted +1)
(shifted +1)
(shifted +1)
(shifted +1)

Similarly

 $M \rightarrow N, I \rightarrow J, K \rightarrow L, E \rightarrow F$ Hence, the correct option is (d).

ODD ONE OUT

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1. In the given question, 51 is not a prime number but 31, 41 and 61 are prime number.

Hence, the correct answer is option (c).

- "DE" are consecutive in the alphabet (D and E are next to each other), while the other pairs (XD, JB, and PH) are not consecutive.
 So, XD6, JB5, and PH3 don't have consecutive letter pairs, while DE3 does. Hence, the correct answer is option (a).
- **3.** In the given question, 729, 125 and 216 is cube of 9, 5 and 6 but 625 is square of 25 so 625 is odd here. Hence, the correct answer is option (d).
- **4.** The other options (SRT, KJL, and VUW) follow a pattern of alternating between letters that go up and down in the alphabet. But PQO doesn't follow this pattern. That's why PQO is the odd one out! Hence, the correct answer is option (b).
- 5. In the given question, all the numbers are products of three consecutive natural numbers, but 124 does not fit the same pattern. $(24 = 2 \times 3 \times 4; 60 = 3 \times 4 \times 5; 210 = 5 \times 6 \times 7)$

Hence, the correct answer is option (c).

6. In all the pairs except option (c), the second alphabet represents the group to which the first word belongs. (Z is 26th, X is 24th and V is 22nd alphabet)

Hence, the correct answer is option (c).

- 7. Each figure is same in shape but shape (a) is not same as all three. Hence, the correct answer is option (a).
- **8.** In this question (a), (b), (d) all have diagonal lines crossing within the shape, only (c) is the shape divided into four sections by straight lines. Hence, the correct answer is option (c).
- **9.** All other shapes have diagonal lines intersecting within the figure, but option (b) is only shape without any diagonal lines. Hence, the correct answer is option (b).
- In this question all (a), (b) and (c) shapes are formed by parallel pair of lines, while the shaped (d) is formed by a combination of non parallel lines.

Hence, the correct answer is option (d).

11. In the given question all (a), (c) and (d) are arithmatic operator but option (b) is a special character.

Hence, the correct answer is option (b).

12. In the given question option (b), (c) and (d) are same because they are diving the shape into equal parts. Only shape (a) is dividing in two unequal halves.

Hence, the correct answer is option (a).

- 13. In the given question option (a), (c) and (d) are food grains but option (b) a oilseed crop not food grain.Hence, the correct answer is option (b).
- 14. In this given question, option (a), (b) and (c) are all capital cities of their respective countries. However Mumbai is odd here. Hence, the correct answer is option (d).
- **15.** In this given question, Hydrometer, Barometer, and Thermometer are all instruments used to measure specific physical properties, but Diameter, however, is a measurement or dimension of an object, Hence, the correct answer is option (d).
- 16. In this question option (a), (b) and (d) are related in same manner but option (c) is written differently. i.e., (c) is mirror image of S. Hence, the correct answer is option (c).
- 17. In this question each alphabet is rotated by 90°. However only in option (c) rotated by 270°.Hence, the correct answer is option (c).
- **18.** In this question option (d) is differently related. In (a), (b) and (c), circles form chain pattern. However in option (d). The circles are not in chain pattern.

Hence, the correct answer is option (d).

- 19. Here is G8 15. G is 7th alphabet so we get 7 + 8 = 15, similarly H is 8th alphabet so 8 + 9 = 17 and A is 1st alphabet so 1 + 2 = 3. But U20 42 does not follow this pattern. So (c) is correct option. Hence, the correct answer is option (c).
- 20. In this question option (a), (b) and (c) are dividing the circles into three parts only option (d) is different.Hence, the correct answer is option (d).
- **21.** In this question option (b) is differently related. Hence, the correct answer is option (b).
- 22. In (a), (b) and (c) the letters follow a pattern where one letter moves back by 1, then forward by 3, and then forward by 1. But in (d) HGIK, the letters move differently.

Hence, the correct answer is option (d).

23. In the given question option (d) PTZ, it breaks the consistent pattern of shifting letters by +4 and +7 like the other options. Hence, the correct answer is option (d).

- 24. In the given question option (a), (b) and (d) follow a pattern where each letter in the sequence progresses by a consistent increment (e.g., +2, +3, +4), but option (c) does not follow the same pattern. Hence, the correct answer is option (c).
- 25. In this question (a), (b) and (d), each letter moves forward by 3 steps in the alphabet. But in option (c), the pattern is not the same. Hence, the correct answer is option (c)
- 26. In all the pairs except option (c), the second word represents the object used by the person in the first word's profession.Hence, the correct answer is option (c) Space : Rocket.
- 27. In all the pairs except option (a), the second word represents a person or role that interacts with the first word.Hence, the correct answer is option (a) Teacher : School
- **28.** In all the pairs except option (d), the words are opposites. Hence, the correct answer is option (d) Anger : Annoyed.
- **29.** In all the pairs except option (b), the second word represents something that is typically paired with or goes with the first word. Hence, the correct answer is option (b) Butter : Bread.
- 30. In all the pairs except option (a), the second word is a tool used by the person in the first word's profession.Hence, the correct answer is option (a) Weed : Axe.
- **31.** In all the pairs except option (a), the second word is the opposite of the first word.

Hence, the correct answer is option (a) Thin : Slender.

32. In all the pairs except option (c), the second word is a counterpart or partner of the first word. Hence, the correct answer is option (c) Nephew : Aunt.

$\overline{3}$ coding and decoding

1. Given : A = 2, M = 26, Z = 52

Observations:

Each letter's value seems to be twice its position in the alphabet. For example:

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A = 1 \times 2 = 2
M = 13 \times 2 = 26
Z = 26 \times 2 = 52
Now, let's calculate the value for BET:

B = 2 \times 2 = 4
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 $E = 5 \times 2 = 10$ $T = 20 \times 2 = 40$ Add these values together: 4 + 10 + 40 = 54So BET will be = 54. Hence, the correct answer is option (c). **2.** Given: CLOUD \rightarrow 59432 $C \rightarrow 5$, $L \rightarrow 9$, $O \rightarrow 4$, $U \rightarrow 3$, $D \rightarrow 2$ $RAIN \rightarrow 1678$ $R \rightarrow 1$, $A \rightarrow 6$, $I \rightarrow 7$, $N \rightarrow 8$ Combine mappings Now, we know the mapping for each letter: $C \rightarrow 5$, $L \rightarrow 9$, $O \rightarrow 4$, $U \rightarrow 3$, $D \rightarrow 2$ $R \rightarrow 1$, $A \rightarrow 6$, $I \rightarrow 7$, $N \rightarrow 8$ Similarly, for AROUND $A \rightarrow 6$, $R \rightarrow 1$, $O \rightarrow 4$, $U \rightarrow 3$, $N \rightarrow 8$, $D \rightarrow 2$ 'AROUND' will be coded '614382'. Hence, the correct answer is option (b). **3.** Given: MASTER \rightarrow 632145" Map letters to digits $M \rightarrow 6$ (1st letter is mapped to 6) $A \rightarrow 3$ (2nd letter is mapped to 3) $S \rightarrow 2$ (3rd letter is mapped to 2) $T \rightarrow 1$ (4th letter is mapped to 1) $E \rightarrow 4$ (5th letter is mapped to 4) $R \rightarrow 5$ (6th letter is mapped to 5) The mapping is positional: $1st \rightarrow 6$, $2nd \rightarrow 3$, $3rd \rightarrow 2$, $4th \rightarrow 1$, $5th \rightarrow 4$, $6th \rightarrow 5$. Similarly, TEARS $T \rightarrow 1$ (4th position in MASTER \rightarrow 1) $E \rightarrow 4$ (5th position in MASTER \rightarrow 4) $A \rightarrow 3$ (2nd position in MASTER \rightarrow 3) $R \rightarrow 5$ (6th position in MASTER \rightarrow 5) $S \rightarrow 2$ (3rd position in MASTER \rightarrow 2) TEARS \rightarrow 14352 So, 'TEARS' will be written as 14352. Hence, the correct answer is option (d). **4.** REASON coded \rightarrow 5 Pattern in REASON, these are 6 letters. So REASON = 6 - 1 = 5

In BELIEVED, 8 letters So BELIEVED = 8 - 1 = 7Similarly, MATHEMATICS = 11 letters So MATHEMATICS = 11 - 1 = 10Hence the correct answer is option (d).

- 5. Given : CLOCK → KCOLC
 The word CLOCK is reversed to become KCOLC.
 Similarly, apply direct code to STEPS.
 STEPS → SPETS
 Hence, the correct answer is option (c).
- 6. Given : TIMBER → BERMIT Look at how the letters of "TIMBER" are rearranged to form "BERMIT". The last 3 letters of "TIMBER" (BER) come to the beginning. The first 3 letters of "TIMBER" (TIM) go to the end. Similarly, BANTER will be written as TERNAB. Hence, the correct answer is option (b).
- 7. Given : SISTER \rightarrow RHRSDQ

$S \rightarrow R$	This is a shift of -1 (S to R).
$\mathrm{I} \to \mathrm{H}$	This is a shift of −1 (I to H).
$S \rightarrow R$	This is a shift of +1 (S to R).
$T \rightarrow S$	This is a shift of -1 (T to S).
$E \rightarrow D$	This is a shift of -1 (E to D).
$R \rightarrow Q$	This is a shift of -1 (R to Q).
1 1	C 11 14 (*) (4

From this, we see that the code follows an alternating pattern of -1 and +1 shifts.

Similarly, apply direct code "UNCLE",

So, UNCLE \rightarrow TMBKD.

Hence, the correct answer is option (d).

8. Given,

 $E \rightarrow 2$, $R \rightarrow 5$, $T \rightarrow 7$, $D \rightarrow 3$, $S \rightarrow 4$, $I \rightarrow 6$, $N \rightarrow 9$ Now, let's apply these replacements to the word "RESIDENT".

 $R \rightarrow 5, E \rightarrow 2, S \rightarrow 4, I \rightarrow 6$

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D \rightarrow 3, \quad E \rightarrow 2, \quad N \rightarrow 9, \quad T \rightarrow 7
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So, RESIDENT becomes 52463297.

We reverse the sequence 52463297 to get the final answer.

Reversed sequence: 79236425.

Hence, the correct answer is option (b).

9. Given : STAG \rightarrow HGZT

 $S \rightarrow H$ $T \rightarrow G$ (opposite order of alphabets)

 $A \rightarrow Z$ $G \rightarrow T$ As, HORN \rightarrow SLIM. $H \rightarrow S$ $O \rightarrow L$ (opposite order of alphabets) $R \rightarrow I$ $G \rightarrow T$ Similarly, $N \rightarrow Y$, $O \rightarrow L$, $R \rightarrow I$, $T \rightarrow G$, $H \rightarrow S$ So, NORTH will be written as MLIGS. Hence, the correct answer is option (b). **10.** Given : CHANDIGARH \rightarrow DNAHCHRAGI Divide the word in equal number of letters Reverse the order of letters CHANDIGARH = CHAND-IGARH Now, reverse the order: DNAHCHRAGI Similarly for SIKKIM = SIK-KIM Reverse the order: KIS-MIK So, 'SIKKIM' will be written as 'KISMIK'. Hence, the correct answer is option (c). **11.** Given : FOX \rightarrow 45 $F \rightarrow 6$ $X \rightarrow 24$ $O \rightarrow 15$, Sum of FOX \Rightarrow 45 (6 + 15 + 24 = 45) Similarly for BOX, $B \rightarrow 2$, $O \rightarrow 15$, $X \rightarrow 24$ Sum of FOX is = 41(2 + 15 + 24 = 41)Hence, the correct answer is option (a). **12.** Given : BOX \rightarrow 213 $B \rightarrow 2$, $0 \rightarrow 1$, $X \rightarrow 3$ Same, BITTER \rightarrow 207749 $B \rightarrow 2$, $I \rightarrow 0$, $T \rightarrow 7$, $T \rightarrow 7$, $E \rightarrow 4$, $R \rightarrow 9$ Similarly, BOXER $B \rightarrow 2$, $O \rightarrow 1$, $X \rightarrow 3$, $E \rightarrow 4$, $R \rightarrow 9$ So, BOXER \rightarrow 21349 Hence, the correct answer is option (d). **13.** Given : BEAR \rightarrow EHDU $B \rightarrow 2$, $E \rightarrow 5$, $A \rightarrow 1$, $R \rightarrow 18$ And $E \rightarrow 5$, $H \rightarrow 8$, $D \rightarrow 4$, $U \rightarrow 21$ B to $E \rightarrow (2 + 3 = 5)$ E to H \rightarrow (5 + 3 = 8)

A to $D \rightarrow (1 + 3 = 4)$ R to U \rightarrow (18 + 3 = 21) Similarly for TIGER code will be T = 20 (20 + 3 = 23)I = 9(9 + 3 = 12)G = 7(7 + 3 = 10)E = 5(5 + 3 = 8)R = 18 (18 + 3 = 21)Thus, "TIGER" is coded as "WLJHU." Hence, the correct answer is option (b). 14. Given : ROSE is coded as 5436. Mappings $R \rightarrow 5$, $O \rightarrow 4$, $S \rightarrow 3$, $E \rightarrow 6$ CHAIR is coded as 78915. $C \rightarrow 7$, $H \rightarrow 8$, $A \rightarrow 9$, $I \rightarrow 1$, $R \rightarrow 5$ Combine both $R \rightarrow 5$, $O \rightarrow 3$, $S \rightarrow 4$, $E \rightarrow 6$, C = 7 $H \rightarrow 8$, $A \rightarrow 9$, $I \rightarrow 1$ Now for SEARCH, the code will be $S \rightarrow 3$, $E \rightarrow 6$, $A \rightarrow 9$, $R \rightarrow 5$, $C \rightarrow 7$, $H \rightarrow 8$ 369578 Hence, the correct answer is option (a). **15.** Given, 'DESK' is written as '#\$★2' Mapping $D \rightarrow \#$, $E \rightarrow$, $S \rightarrow \bigstar$, $K \rightarrow 2$ Same way, 'RIDE' is written as '%7#\$' $R \rightarrow \%$, $I \rightarrow 7$, $D \rightarrow #$, $E \rightarrow$ Combine both $D \rightarrow #$, $E \rightarrow$, $S \rightarrow \bigstar$, $K \rightarrow 2$, $R \rightarrow \%$, $I \rightarrow 7$, $D \rightarrow #$, $E \rightarrow \$$ Similarly for 'RISK', code will be : $R \rightarrow \%$, $I \rightarrow 7$, $S \rightarrow \bigstar$, $K \rightarrow 2$, 'RISK' is coded as $\%7 \pm 2$. Hence, the correct answer is option (b). **16.** Given : PROFIT \rightarrow RTQHKV. $P \rightarrow R$ (+2 letter) same for each $R \rightarrow T, \quad O \rightarrow O,$ $F \rightarrow H$, $I \rightarrow K$, $T \rightarrow V$ Similarly, we follow same pattern for RECORD $R \rightarrow T$, $E \rightarrow G$, $C \rightarrow E$, $O \rightarrow Q$, $R \rightarrow T$, $D \rightarrow F$ Record will be coded as TGEQTF. So (b) is the correct option.

- We know that, Peacock is the Indian National Bird but here Peacock is known as Swallow. So, the answer is Swallow. Hence, the correct answer is option (b).
- 18. The fruit grows on a tree. Here, Tree is called Sky. Therefore, Fruit grows on the sky. So, the correct answer is Sky. Hence, the correct answer is option (c).
- 19. A person sits on a chair. According to the given information, a chair is a roof. Therefore, the roof is the correct answer. Hence, the correct answer is option (c).
- **20.** Here A person stands on a floor and floor is called roof . So, the correct answer is option (d).
- 21. 'Eye' is called 'hand'.
 - 'Hand' is called 'mouth'. 'Mouth' is called 'ear'. 'Ear' is called 'nose'. 'Nose' is called 'tongue'. 'ear' is called 'nose'. Therefore, a person hears with the 'nose' in Question. Hence, the correct answer is option (a).
- 22. Given,

Diamond' is called 'gold'.

'Gold' is called 'silver'.

'Silver' is called 'ruby'.

'Ruby' is called 'emerald'.

Cheapest jewel is 'silver' and since silver is called ruby, 'ruby' is the cheapest.

Hence, the correct answer is option (c).

23. Given

'RHOMBUS' means 'CIRCLE'. 'CIRCLE' means 'RECTANGLE'. 'RECTANGLE' means 'TRIANGLE'. 'TRIANGLE' means 'KITE'. In this 'TRIANGLE' is formed only from 3 straight lines. And TRIANGLE' is called 'KITE'. Hence, the correct answer is (a) KITE.

24. Given,

Letters	Y	U	Т	L	Ι	F	Е	В	А
Codes	Х	λ	β	\$	_	?	+	*	#

Then " \star +# $\lambda\beta$ X" is BEAUTY.

Hence, the correct answer is (c) .

25. Given,

Digit	7	2	1	5	3	9	8	6	4
Letters	А	L	М	Р	Ι	Ν	D	J	E

94572 this will be coded as NEPAL.

Hence, the correct answer is (c).

26. Given,

 $O \rightarrow 16$, FOR $\rightarrow 42$, F $\rightarrow 7$, $O \rightarrow 16$, R $\rightarrow 19$ Similarly for FRONT. F $\rightarrow 7$, R $\rightarrow 19$, $O \rightarrow 16$, N $\rightarrow 15$, T $\rightarrow 21$

Now add 7 + 19 + 16 + 15 + 21 = 78 FRONT (7 + 19 + 16 + 15 + 21 = 78)

Hence, the correct answer is (d).

27. Given: RIGHT \rightarrow SGJDY

Observed,

 $R \rightarrow S$: Shifted forward by 1 position

 $I \rightarrow G$: Shifted backward by 2 positions

 $G \rightarrow J$: Shifted forward by 3 positions

 $H \rightarrow D$: Shifted backward by 4 positions

 $T \rightarrow Y$: Shifted forward by 5 positions Similarly, UPDZJ

 $T \rightarrow U$: Shifted forward by 1 position

 $R \rightarrow P$: Shifted backward by 2 positions

 $A \rightarrow D$: Shifted forward by 3 positions

 $D \rightarrow Z$: Shifted backward by 4 positions

 $E \rightarrow J$: Shifted forward by 5 positions

Thus, "UPDZJ" decodes to "TRADE".

In the given options (c) is the correct option.

28. Given : VALUE \rightarrow XCNWG

 $V \rightarrow X$: Shifted forward by 2 positions

 $A \rightarrow C$: Shifted forward by 2 positions

 $L \rightarrow N$: Shifted forward by 2 positions

 $U \rightarrow W$: Shifted forward by 2 positions

- $E \rightarrow G$: Shifted forward by 2 positions
- Similarly, MONTH is coded as:

 $M \rightarrow O, \quad O \rightarrow Q, \quad N \rightarrow P, \quad T \rightarrow V, \quad H \rightarrow J$ MONTH \rightarrow OQPVJ Hence, the correct answer is (c).

29. Given : 'SOMEDAY' \rightarrow 'RNLDCZX'.

 $S \rightarrow R$ (Difference -1)

 $O \rightarrow N$ (Difference -1) $M \rightarrow L$ (Difference -1) $E \rightarrow D$ (Difference -1) $D \rightarrow C$ (Difference -1) $A \rightarrow Z$ (Difference -1) $Y \rightarrow X$ (Difference -1) Similarly, 'HEALTHY' is coded as : $H \rightarrow G, \quad E \rightarrow D, \quad A \rightarrow Z, \quad L \rightarrow K, \quad T \rightarrow S, \quad H \rightarrow G, \quad Y \rightarrow X$ HEALTHY → GDZKSGX Hence, the correct answer is (a). **30.** Given : CADET \rightarrow 31457 $C \rightarrow 3$, $A \rightarrow 1$, $D \rightarrow 4$, $E \rightarrow 5$, $T \rightarrow 7$ Similarly, DEFER $D \rightarrow 4$, $E \rightarrow 5$, $F \rightarrow 6$, $E \rightarrow 5$, $R \rightarrow 9$ SO, DEFER \rightarrow 45659 Hence, the correct answer is (d). **31.** Given : MADE \rightarrow 12236 and BAD \rightarrow 123, Similarly DECK $D \rightarrow 4$, $E \rightarrow 5$, $C \rightarrow 3$, $K \rightarrow 11$ Therefore, "DECK" is coded as 36212. Hence, the correct answer is (d). **32.** Given : SON \rightarrow 345 $S \rightarrow 3$, $O \rightarrow 4$, N = 5Similarly, ROAM \rightarrow 6412. $R \rightarrow 6$, $O \rightarrow 4$, $A \rightarrow 1$, $M \rightarrow 2$ Combine these $S \rightarrow 3$, $O \rightarrow 4$, $N \rightarrow 5$, $R \rightarrow 6$, $O \rightarrow 4$, $A \rightarrow 1$, $M \rightarrow 2$ For RANSOM, the code is $R \rightarrow 6$, $A \rightarrow 1$, $N \rightarrow 5$, $S \rightarrow 3$, $O \rightarrow 4$, $M \rightarrow 2$ So "RANSOM" is coded as 615342. Hence, the correct answer is (a). **33.** Given, $FLOWER \rightarrow 14$ It has 6 letter $(6 \times 2) + 2 = 14$ DISTASTE \rightarrow 18, It has 8 letter $(8 \times 2) + 2 = 18$ Similarly, BUREAUCRAT It has 10 letter $(10 \times 2) + 2 = 22$

Thus, the correct answer is (c) 22. Hence, the correct answer is (c). **34.** Given : CAB \rightarrow 6 $C \rightarrow 3$, A = 1, $B \rightarrow 2$ Multiplying these values: $3 \times 1 \times 2 = 6$ and BED \rightarrow 40, $B \rightarrow 2$, $E \rightarrow 5$, $D \rightarrow 4$ Multiplying these values: $2 \times 5 \times 4 = 40$ Similarly, HAD $H \rightarrow 8$, $A \rightarrow 1$, $D \rightarrow 4$ Multiplying these values: $8 \times 1 \times 4 = 32$ Hence, the correct answer is (b). **35.** Given : SMOKE \rightarrow 81643 $S \rightarrow 8$, M = 1, $O \rightarrow 6$, $K \rightarrow 4$, $E \rightarrow 3$ and PRANK \rightarrow 72954, $P \rightarrow 7$, $R \rightarrow 2$, $A \rightarrow 9$, $N \rightarrow 5$, $K \rightarrow 4$ Now, we apply values for ROSE : $R \rightarrow 2$, $O \rightarrow 6$, $S \rightarrow 8$, $E \rightarrow 3$ "ROSE" is coded as 2683. Hence, the correct answer is (d).

4 BLOOD RELATION

- According to the question, The woman's mother's brother is her uncle. The son of the woman's uncle is her cousin. Therefore, the man is the woman's cousin. Hence, the correct answer is (b).
- 2. Given,

F is the brother of A. So, F and A are siblings A is the sister of D. This means F and D are also siblings. Similarly, D is the father of E. So, E is the child of D. Now, How is F related to E? Since F is D's brother, and D is E's father, F is E's uncle. Hence, the correct answer is (a).

3. Given, Manish has two daughters. So, we know there are 2 girls.





Each daughter has a brother. Since both daughters share the same family, they must have the same brother does not be a constrained on the same brother does not

4. Given,

Tina and Mina are sisters. Rob is the brother of Tina. This means Rob is also Mina's brother and bob is son of Meena. Hence Bob the nephew of Rob. Hence, the correct answer is (a).





5. Given,

P and Q are a married couple, this means P is Q's husband.

Q and R are sisters, so R is P's sister-in-law.



S is R's brother-in-law because S is the brother of R's brother-in-law P Hence, the correct answer is (a).

6. Given,

Vikram said, "I have beaten the brother of your mother's only daughter. Our mother's only daughter means Anil's sister.

The brother of Anil's sister is Anil himself.

So, Vikram beat Anil.

Hence, the correct answer is (a).

7. Given,

Simran's father is the only son of Meena's father.

This means Simran's father is Meena's brother (since he is the only son of Meena's father)

Meena's husband is Simran's father's father-in-law, so he must be Simran's grandfather.

Hence, the correct answer is (b).

8. Lata's friend's mother has a brother-in-law, meaning her friend's father has a brother.

The girl Lata met is the youngest daughter of this brother, meaning the girl is the daughter of Lata's friend's uncle.

Therefore, the girl is Lata's friend's cousin.

Hence, the correct answer is (c).

- 9. Mike's father has an elder brother, who is Rohan's grandfather.
 Mike is the nephew of Rohan's grandfather.
 Hence, the correct answer is (b).
- Samantha's mother's brother is Samantha's uncle, so Mark is the son of her uncle, which makes him Samantha's cousin. Hence, the correct answer is (d).
- According to the question, Gagan is Feroz's father, and Meera is Gagan's wife, so Meera is Anu's mother because Anu is Gagan's daughter. Hence, the correct answer is (c).
- 12. According to the question, Priya's mom's brother is Priya's uncle, and the only son of her uncle is Priya's brother. Since Priya says this person is Shreya's father, it means Shreya's father is Priya's brother, so Shreya is Priya's cousin. Hence, the correct answer is (c).
- Deepak said to Nitin, "Your mother's husband's sister is my aunt. So Deepak is Nitin's cousin. Hence, the correct answer is (b).
- 14. According to the question, Prerna said, "His mother is the only daughter of my mother." This means Arjun's mother is Prerna's sister, So Arjun is Prerna's nephew. Hence, the correct answer is (d).
- According to the question, the man is the son of the brother of her mother, which means he is the woman's Cousin Hence, the correct answer is (d).
- **16.** According to the question, Tara says, "The wife of your grandfather's only son is my mother."













Feroz

Mik elds bro

Neetu

Anu

nephew

Brother

Mark

Grand parent

Mike father

Mike

Mother

Your grandfather's only son is Lila's father. The wife of Lila's father is Lila's mother, and Tara says this woman is her mother. This means Tara is Lila's sister.

Hence, the correct answer is (b).

17. Given, John said to Emma, "Your father's wife is my mother's daughter." So Emma is John's niece because Emma's mother is John's sister. Hence, the correct answer is (b).





S

М

cousin

0

- 18. According to the question, M is T's cousin because M's father (S) is P's brother, and P is T's father. Hence, the correct answer is (c).
- **19.** According to the question, The man is the brother of the speaker because his mother is the only daughter of the speaker's mother. Hence, the correct answer is (a).
- 20. Your brother's father is your father. My father's son refers to me (the speaker), since I am the son of my father. So, if your brother's father is my father's son, it means that your father is me. Thus, you are my child.

Hence, the correct answer is (d).

- **21.** Lily calls Jack her nephew, but since Jack is the grandson of her brother, he should be her great-nephew, not her nephew. Hence, the correct answer is (b).
- 22. According to the question, W is Z's sister, and Z and Y are brothers. Since X is Y's daughter, W is X's aunt. Hence, the correct answer is (b).



- **23.** According to the question, Mark is telling his son that his sister's father's wife is coming. His sister's father is Mark himself, and his wife is the boy's mother. So, Mark's wife is visiting! Hence, the correct answer is (a).
- 24. According to the question, The sister of Raj's mother is Raj's aunt. So, Raj's aunt is going to Italy. Hence, the correct answer is (b).
- **25.** Paul's daughter's mother's brother is her uncle. That uncle's wife is Paul's sister-in-law and the daughter's aunt. So, he is referring to his sister-in-law! Hence, the correct answer is (b).

- 26. Given, X is the daughter of Y (so X is female). W is married to Y (so W is likely female). T is the sister of W (so T is female). Thus, the females in the family are X, W, and T. So, there are 3 females in the family. Hence, the correct answer is (b).
- 27. Given, Z is not the father of X, so Z is X's mother. Z is married to V, and U is the son of W.So, none of these options are correct.Hence, the correct answer is (d).

5 SERIES COMPLETION AND INSERTING

1. In the given series

 $6 \rightarrow 3$ (divided by 2) $3 \rightarrow 12$ (multiplied by 4) $12 \rightarrow 6$ (divided by 2) $6 \rightarrow 18$ (multiplied by 3) 18/2=9

So, the number 9 will replace the question mark. Hence, the correct answer is option (d).

2. In the given series

$$1^{2} = 1$$
 (1 square = 1)
 $2^{2} = 4$ (2 square = 4)
 $3^{2} = 9$
 $4^{2} = 16$
 $5^{2} = 25$

Similarly $6^2 = 36$

So, the number 36 will replace the question mark. Hence, the correct answer is option (a).

3. In the given series the difference between each number is 5.

 $1 \rightarrow 6 \rightarrow 11$: The difference here is 5. (1 + 5 = 6, and 6 + 5 = 11)

Similarly

11 + 5 = 16

So, the number 16 will replace the question mark. Hence, the correct answer is option (b).

4. In the series the pattern is

$$3 + 2 = 5$$
$$5 \times 2 = 10$$

10 + 2 = 12 $12 \times 2 = 24$ 24 + 2 = 26 $26 \times 2 = 52$

So, the number 52 will replace the question mark. Hence, the correct answer is option (d).

5. In the series the pattern is

 $3 \times 2 = 6$ $5 \times 4 = 20$ $7 \times 6 = 42$ $9 \times 8 = 72$

So, the number 72 will replace the question mark. Hence, the correct answer is option (b).

6. Looking at each column:

First column: $42 \rightarrow 28 \rightarrow 39$ We subtract 14 (42 - 14 = 28), then add 11 (28 + 11 = 39). Second column: $28 \rightarrow 35 \rightarrow ?$ We add 7 (28 + 7 = 35), so we add 7 again to get the next number: 35 + 7 = 42. Third column: $38 \rightarrow 23 \rightarrow 37$ We subtract 15 (38 - 15 = 23), then add 14 (23 + 14 = 37). So, the number 42 will replace the question mark.

- Hence, the correct answer is option (b).
- 7. In first figure the pattern is

$$4 \times 5 = 20$$
$$20 \times 3 = 60$$

2 6

In second figure the pattern is

$$\begin{array}{l} \times \ 3 = 6 \\ \times \ 3 = 18 \end{array}$$

Similarly,

$$1 \times 7 = 7$$
$$7 \times 3 = 21$$

So, the number 21 will replace the question mark. Hence, the correct answer is option (b).

8. In first figure the pattern is

```
8 + 5 = 13
4 + 1 = 5
13 - 5 = 8
In second figure the pattern is
7 + 4 = 11
3 + 1 = 4
11 - 4 = 7
```

Similarly,

9 + 2 = 112 + 3 = 511 - 5 = 6

Hence, the correct answer is option (d).

9. In the given figure the pattern is

 $4 \times 3 + 4 = 16$ $5 \times 2 + 6 = 16$ $7 \times 4 + 2 = 30$

So, the number 30 will replace the question mark. Hence, the correct answer is option (c).

- 10. In the first raw the difference is 8. In second raw difference is 2. In third raw the difference is 6. So, the number 13 will replace the question mark. Hence, the correct answer is option (d).
- **11.** Look at each column:
 - First column: $16 \rightarrow 18 \rightarrow 11$ $16 \rightarrow 18$: Add 2 (16 + 2 = 18) $18 \rightarrow 11$: Subtract 7 (18 - 7 = 11) Second column: $17 \rightarrow 14 \rightarrow ?$ $17 \rightarrow 14$: Subtract 3 (17 - 3 = 14) To follow this pattern, subtract 3 again: 14 - 3 = 11Third column: $12 \rightarrow 13 \rightarrow 20$ $12 \rightarrow 13$: Add 1 (12 + 1 = 13) $13 \rightarrow 20$: Add 7 (13 + 7 = 20) So, the number 14 will replace the question mark. Hence, the correct answer is option (c).
- **12.** For first figure

15 -	- 9	=	6
22 –	16	=	6
	62	=	36

For second figure

$$11 - 7 = 4$$

 $13 - 9 = 4$
 $4^2 = 16$

Similarly for third figure

$$21 - 13 = 8$$

 $x - 15 = 8$
 $x = 8 + 15$
a will be 23

Hence the correct value will be 23.

Hence, the correct answer is option (c).

26	18	10
11	9	7
25	19	?

13. In the first figure $9 \times 4 - 3 \times 2 = 30$ In second figure $8 \times 5 - 7 \times 4 = 12$ In the third figure $9 \times 5 - 7 \times 4 = 17$ Hence, the correct answer is option (b). **14.** In this question for figure 1 Pattern is 6 - 2 = 4 (at 4th place alphabet d comes) For second figure 16 - 8 = 8 (h) For third figure Similarly 26 - 6 = 20 (t) So, the number t will replace the question mark. Hence, the correct answer is option (c). 15. For first figure 14 - 13 = 1, 16 - 15 = 1Same for second figure Pattern will be same 12 - 10 = 2, 18 - 16 = 2Similarly for third figure 16 - 9 = 7, $x - 13 = 7 \Longrightarrow x = 13 + 7 = 20$ Hence, the correct answer is option (a). **16.** For the first figure 16 - 11 = 534 - 29 = 5In alphabate on 5th position E comes. Similarly for the second figure 18 - 8 = 1045 - 35 = 10So in alphabates on 10th position J comes Hence, the correct answer is option (a). 17. In first row $1 + \frac{1}{2} = \frac{3}{2}$

In second row

$$2 + \frac{2}{3} = \frac{8}{3}$$

Similarly in third raw

$$3 + \frac{3}{4} = \frac{15}{4}$$

Hence, the correct answer is option (b).

18. In the given question the pattern is $1^2, 2^2, 3^2, 4^2$

Hence the correct option will be 9/I Hence, the correct answer is option (b).

19. In this series

$3 \rightarrow 8$	(difference is 5)
$8 \rightarrow 15$	(difference is 7)
$15 \rightarrow 24$	(difference is 9)
$24 \rightarrow 35$	(difference is 11)
$35 \rightarrow 48$	(difference is 13)
48 + 15 = 63	

Hence, the correct answer is option (c).

20. In this series pattern is

Difference between each digit is $1^2, 2^2, 3^2, 4^2, 5^2$ So the correct digit will be 56.

Hence, the correct answer is option (b).

21. In the first figure

1 + 2 = 3 (in alphabate C comes at 3rd position) In the second figure 2 + 3 = 5 (E) Similarly in third figure

3 + 4 = 7 (in alphabate G will come)

Hence, the correct answer is option (c).

22. In first raw

 $5 + 4 = 9 = 9^2 = 81$ Similarly $8 + 4 = 12 = 12^2 = 144$ Hence, the correct answer is option (b).

23. The pattern is

11 - 6 = 5 (E comes at place 5) Similarly

4 - 3 = 1 (A)

Hence, the correct answer is option (d).

24. In this 15 will be correct option

 $15 \times 2 = 30$

Hence, the correct answer is option (a).

25. In first figure pattern is

$$16 \times \frac{5}{4} = 20$$

Similarly in third figure

$$18 \times \frac{4}{2} = 36$$

Hence, the correct answer is option (a).

26. In first figure the pattern is

$$38 + \frac{25}{9} = 7$$

Similarly

$$59 + \frac{18}{x} = 7$$
$$x = 11$$

Hence, the correct answer is option (a).

27. In this question the sum of three bubble is 15. First three bubble

$$6 + 4 + 5 = 15$$

$$6 + 8 + 1 = 15$$

$$5 + 3 + 7 = 15$$

$$x + 7 + 1 = 15$$

$$x = 7$$

Hence, the correct answer is option (a).

28. In this question the pattern is

16 + 20 = 36 + 4 = 4025 + 21 = 46 + 4 = 50

Similarly

32 + 23 = 55 + 4 = 59

Hence, the correct answer is option (d).

29. In this question In first figure

```
6 \times 3 - 9 \times 2 = 0
```

In second figure

 $11 \times 2 - 5 \times 4 = 2$

Similarly in third figure

 $7 \times 7 - 8 \times 6 = 1$

Hence, the correct answer is option (c).

30. In the first figure

$$9 \times 3 + 4 = 30$$

 $8 \times 2 + 4 = 20$

Value of $(x^2 - 1)$

$$20^2 - 1 = 400 - 1 = 399$$

Hence, the correct answer is option (b).

6 LOGICAL VENN DIAGRAM

- Teacher, Men , Women Men, Women are different from each other but some men may be teacher and some women may be teacher. Hence, the correct option is (b).
- Cat, Dog, Snake Cat, Dog, Snake are different from each other. No relation between them. Hence, the correct option is (a).
- **3.** Minutes, Days, Months All minutes are days. All days are months. Hence, the correct option is (a).
- **4.** Zebra, Grass-eating animals, Lion All Zebra are grass-eating animals. Lion is not related to Zebra and grass-eating animal.

Hence, the correct option is (a).

- Athletes, Swimmers, Runners Some swimmers are athletes, some runners are also athlete. Some swimmer can also be runners. Hence, the correct option is (b).
- Cats, Mammals, Dogs All cats are mammals. All dogs are mammals. Hence, the correct option is (a).
- Continents, Cities, Countries All cities are countries. All countries C are continents. Hence, the correct option is (b).



- 8. California, USA, World California is in USA. USA is in world. Hence, the correct option is (a).
- 9. Baseball, Tennis, Sports Baseball is a subset of sports. Tennis is a subset of sports. Hence, the correct option is (d).
- Vechicle, Car, Man Car is a subset of Vechicle. There is no relation between Vechicle and Man. Hence, the correct option is (d).



- 11. 'A + B + C' people only speak one language. Hence, the correct option is (d).
- **12.** 'F' of the student who likes all three flavours of ice-cream. Hence, the correct answer is option (a).
- **13.** 'A + C + F' are the group who have exactly 2 pets. Hence, the correct option is (b).
- **14.** 'F' likes the 'white' and 'black' colour dislike 'red' colour. Hence, the correct option is (c).
- **15.** 'F' student like ice-cream and chocolates but not pizza. Hence, the correct option is (a).
- **16.** 'E' are the ladies who are teachers but principal. Hence, the correct option is (c).
- 17. 'B' who have dogs and cats as pets. Hence, the correct option is (b).
- 18. 'A' represent all the three. i.e. boys, intelligent students and disciplined students. Hence, the correct option is (d).
- **19.** '4' represent females that are educated but not housewife. Hence, the correct option is (c).
- **20.** '4' represent men below 30 years of age. Hence, the correct option is (d).
- **21.** '6' represent male cricket lover who is not a doctor. Hence, the correct option is (d).
- **22.** 'D' represent rural sports boys. Hence, the correct option is (c).
- **23.** '2, 9' represents animals with big claws. Hence, the correct option is (b).
- **24.** '13' students are hardworking and punctual but not intelligent. Hence, the correct option is (c).

$\langle \mathbf{1} \rangle$

SEATING ARRANGEMENT

1. Given: H I J K L M N are sitting in a row. H is sitting second to the left of K means K H M is sitting third to the right of H K, __, H, __, __, M,__ Who is sitting middle? Remaining are I J L N. Fill in arrangement K, I, H, J, L, M, N So the middle will be 4th letter as there are 7 letters ie J. Hence, the correct answer is option (c). 2. Given: I is immediate left of J. IJ I is second to the right of L. L_IJ Second left of J will be L as remaining alphabats are HKMN HLKIJMN Hence, the correct answer is option (d). 3. Given: N L So the pattern will be _ _ N _ L _ _. Remaining letters are H I J K M. Fill remaining letters: H I N J L K M. Far right M is sitting. Hence, the correct answer is option (d). 4. Raw pattern given: H I J K L M N So if I, J interchange their position HJIKLMN & L & M also then HJIKMLN Then immediate left of K will be I. Hence, the correct answer is option (a). 5. From the previous pattern or H J I K M L N. Immediate neighbours of M are L & K. Hence, the correct answer is option (d). 6. A B C D E

Given: _ A B C _

Here, the middle of the five students is B. Hence, the correct answer is option (b). **7.** Given: E _ _ _ _ and D is second to the right of E E_D__ From previous question we know that ABC are sitting together then fill EABCD Now at far right end there is D. Hence, the correct answer is option (d). 8. D is sitting second to the right of E who is at of the end. It tells us E is either first or last then pattern looks like __D_E We know that ABC are sitting together. DCBAE DBCAE Swap B/C Swap A/D ABCDE Now immediate left of E is D. Hence, the correct answer is option (b). 9. From previous pattern DCBAE After swap C/D CDBAE Neighbours of B are D & A Hence, the correct answer is option (c). **10.** A is sitting second left to D. A D From the previous order students are : DCBAE Now if A is sitting second of D order will be CABDE Then far left end will be C. Hence, the correct answer is option (b). **11.** Given: S T U V W X Y T is sitting left of U, means: T U. TU V Here U is in the middle in all possibilities. Hence, U is in the middle. Hence, the correct answer is option (c).

12. T is at an end T _____ S is two seats right of T. T_S____ X is next to S. T_SX___ From previous question we know that T & U are setting next to each other. So, TUSX___ We know T is three seats away from V. We can add V. TUSX_V_ Now fill spots: TUSXWVY Far right end is Y. Hence, the correct answer is option (d). 13. Here, from previous order: T U S X W V Y. Swap U/V TVSXWUY Here, in the right of T is V. Hence, the correct answer is option (b). **14.** Previous arrangement: TUSXWVY — (original order) Swap S/U TSUXWVY Neighbors of Y are V & W. Hence, the correct answer is option (c). **15.** V is sitting second to the left of W. Y is not sitting at any end. Order is $_V_W__$ Since Y is not at any end then order. __V_WY_ We can add T and U to the beginning of the line. TUV WY We can add S & X then order will be TUVSWYX (Note: If person facing center then all right side consider anticlockwise & left will consider clockwise) At far left end is T. Hence, the correct answer is option (b). **16.** From the given info students are sitting in the circle: The order is :

30



Here option (b) is correct as C is between A & E. Hence, the correct answer is option (b).

- 17. The right of E are from the circular order are G F D. In the options are D F G. Hence, the correct answer is option (c).
- **18.** Here all the students are sitting in the circle not in the row. So, (d) is the correct option.
- **19.** None of the options are correct here. So, (d) is correct option.
- **20.** None of the options are correct. As G is the right of E. Hence, the correct answer is option (c).
- 21. From the question itself. A is immediately of right of B. B A
 B is second to the right of G. G _ B A
 C is immediate right of G. G C _ B A
 F is third to the left of G. F G C _ B A
 D is second to the right of E. F G C B A E D
 So, from this order D is immediate right of E. Hence, the correct answer is option (d).
- **22.** From the order

F G C B A E D C and D are not neighbours. Hence, the correct answer is option (c).

23. From the question

N-J-I-H-M-L-K Thus, the students sitting to the right of L are K, N, J. Hence, the correct answer is option (d).

24. Arrangement we have

N-J-I-H-M-L-K

as L is sitting directly opposite I, and L is not one of the options listed.

So, none of these is sitting directly opposite to I. Hence, the correct answer is option (d).

- 25. From the given arrangement (b) is correct answer M is setting Second to the right of L. Hence, the correct answer is option (b).
- 26. From the given arrangement M is to the immediate right of H. Hence, the correct answer is option (a).
- 27. From the given arrangementL is sitting right of K.Hence, the correct answer is option (d)
- 28. From the given arrangementJ is in position 2 and K is in position 7.J and K are not sitting next to each other, so this option is correct.Hence, the correct answer is option (c).
- **29.** From the question:



M is in between O and Y. Hence, the correct answer is option (a).

- **30.** C and X are not neighbours. Hence, the correct answer is option (a).
- 31. Here, option (c) is correct as B is to the immediate left of Y.
- 32. Gita is 10th from the front. Mukesh is 25th from behind (so his position from the front is 26th). Rita is in the middle of Gita and Mukesh. There are 50 people in total. Rita is exactly in the middle between Gita (10th) and Mukesh (26th). Middle position = (10 + 26) ÷ 2 = 18th. Hence, the correct answer is option (c).
- 33. Manoj is 12th from the right. Manoj is 4th from the left. There are currently some boys in the line, and we want to make the total number of boys 28. Since Manoj is 12th from the right and 4th from the left total number of boys in the line

Total boys = 4 + 12 - 1 = 15The total number of boys to be 28. 28 - 15 = 13Hence, the correct answer is option (b).

- 34. A is to the left of B, but on the right of C. D is on the right of B, but on the left of E. Complete order will be: C, A, B, D, E. The member sitting in the middle is (a) B. Hence, the correct answer is option (a).
- 35. Jay is 16th from the left. Jitu is 8th from the right. After interchanging their positions, Jay becomes 33rd from the left. Jitu's position from the left is N - 8 + 1=N - 7. After the interchange, Jay becomes 33rd from the left. So, Jay moves to position 33 from the left, and Jitu moves to the 16th position. Which means the total number of students N = 40.

Hence, the correct answer is option (a).

$\left< 8 \right>$ DIRECTION SENSE TEST

1. Start
$$N$$

W \leftarrow E
New S

The car starts in the north-west direction. After a 90° left turn, it goes to the south-west direction. Hence, the correct answer is option (a).

2.
$$30 \begin{pmatrix} N \\ 60 & 90 \end{pmatrix}$$

Rita moves South for 60 meters. She turns right and moves 30 meters. After turning right from south, she faces west and moves 30 meters. She turns right again and walks 90 meters.

After turning right from west, she faces north and moves 90 meters. She turns right at 45°.

Turning right from north at 45° makes her face south-east. Hence, the correct answer is option (d).

- 3. Lets break it down
 - 1. 120 m west 2. 20 south 3. 40 m east 4. 20 m south Net displacement = West 120 - 40 = 80 m South 20 + 20 = 40 m Apply Pythagoras theorem $\sqrt{80^2 + 40^2} = \sqrt{6400 + 1600}$ $= \sqrt{8000}$ m

= 89.44 m

Rounding to nearest 100 we get 100 m So, the boy is 100 metres away from his starting point. Hence, the correct answer is option (b).

- **4.** Lets break it down:
 - 1.10 km north
 - 2. 5 km south (10 5 = 5 km north)
 - 3.8 km east

4. 4 km north (5 km + 4 km = 9 km north)

Net displacement = 9 km north

= 8 km east

Using Pythagoras theorem we get

$$\sqrt{9^2 + 8^2} = \sqrt{81 + 64} = \sqrt{145} \approx 12.04 = 13 \text{ km}$$

Direction = North east So correct option is (a).

5. Start facing South.

3/4 of a revolution means 270° clockwise.
90° clockwise from South: You will face West.
180° clockwise from South: You will face North.
270° clockwise from South: You will face East.
So, after making 3/4 of a revolution (270° clockwise), you will face East.
Hence, the correct answer is option (b).

6. The sunrise happens in the east, so Sarah starts facing East. She starts walking straight in the East direction. After walking, Sarah turns to her right. A right turn from East will make her face South. Left turn from South will make her face East again. A right turn from East will make her face South. After all these turns and movements, Sarah is now walking in the South direction. Hence, the correct answer is option (d).

7. A is facing east, and E is directly opposite A, so E is facing west. B is sitting to the right of A, so if A is facing east, B must be facing south. D is facing north, so D is seated at the opposite side of B, facing north. C must be the person who is sitting opposite B, meaning C is facing south.



Hence, the correct answer is option (c).

8. The cyclist is 4 km north and 2 km east from where he started. So, he is in the north-east direction.

Hence, the correct answer is option (a).

- **9.** Leena walks 20 metres east. She turns right and walks 10 metres south. She turns left and walks 5 metres east. She turns right again and walks 15 metres south. So, Leena is now moving south. Hence, the correct answer is option (d).
- 10. After traveling 100 km south and then going 50 km north, the train is still 50 km south of where it started. It traveled 50 km west, but hasn't moved east or back to the starting point. Hence, the correct answer is option (a).
- **11.** So, after turning 1/2 of a revolution anticlockwise, you will face east. Hence, the correct answer is option (a).
- **12.** Mike walks:
 - 15 meters north.

Then, he turns left and walks 20 meters west.

He turns left again and walks 15 meters south.

Since he walked 15 meters north and then 15 meters south, he's back at the same level as where he started. But he walked 20 meters west, so he is 20 meters away from his starting point.

Hence, the correct answer is option (b).

13. So, after three consecutive right turns, you'll be facing west. Hence, the correct answer is option (d).

- Each friend is walking along the diagonal of the square towards the center, so they are walking in the north-east direction. Hence, the correct answer is option (a).
- 15. T is north-east of S, and S is north-west of U. So, U is to the west of T. Hence, the correct answer is option (b).
- 16. The person is 2 km north and 3 km east from the starting point, so they are in the north-east direction.Hence, the correct answer is option (d).
- 17. Lisa walks 15 km south, then 20 km west, and finally 10 km south. Using the Pythagorean theorem, her straight-line distance from the starting point is approximately 25 km.

Hence, the correct answer is option (a).

- 18. After V walks 6 km North and W walks 8 km West, they are 10 km apart. They each walk 3 km towards each other. So the distance become 4 km. So V's and W's final distance from starting point is 9 km. So, (c) is correct option.
- **19.** Gita is facing north-west. The direction exactly opposite to north-west is south-east.

Hence, the correct answer is option (b).

20. At 6 o'clock, both hands are pointing north. This means the clock is positioned differently than usual.

Now, at 3:15: The minute hand at 15 minutes will be at the 3 o'clock position.

The hour hand is between 3 o'clock and 4 o'clock, but we are only concerned with the minute hand.

Since the clock is rotated, at 3:15, the minute hand will point towards the south-west direction.

Hence, the correct answer is option (c).

21. If Mira is facing the rising Sun to her right, she is facing South. Since Leo and Mira are facing each other, Leo must be facing the opposite direction, which is North.

Hence, the correct answer is option (a).

22. Originally, the signpost is pointing east. After being knocked over, it points upwards.

If the signpost is pointing upwards, it is pointing north (since "up" on most maps is north).

The traveler thinks it's pointing south, but in reality, they are heading north.

Hence, the correct answer is option (a).
23. Turn 180° anti-clockwise: From east, a 180° anti-clockwise turn makes you face west.

Hence, the correct answer is option (d).

- 24. In the morning, the sun rises in the east. If the tree's shadow is falling directly to Seema's left, then Seema must be facing the north, because the shadow would fall to her left when facing the east. Hence, the correct answer is option (a).
- 25. Raj started facing west because after three left turns and one right turn, he ended up facing east.Hence, the correct answer is option (d).
- **26.** After walking north, taking a left turn to face west, and another left turn, Shalu is now facing south. Hence, the correct answer is option (d).
- 27. The person walks 150 meters north. Then, they turn right and walk 200 meters. A 135° clockwise turn from east will make them face south-west. Hence, the correct answer is option (a).
- 28. The minimum distance between his initial and final position is 13 km, calculated using the Pythagorean theorem The correct answer is (b) 13 km. Hence, the correct answer is option (b).
- **29.** After turning 100° clockwise and then 145° anticlockwise, you will be facing South-west. Hence, the correct answer is option (b).
- **30.** If West is replaced by North-East, then South will be replaced by North-West.

Hence, the correct answer is option (a).

31. Since Aryan's shadow falls to Chaya's left in the morning, Aryan is facing south.

- 32. If Megha was facing south and turned clockwise to face east, she turned 270° in total go from South to East. Hence, the correct answer is option (c).
- 33. Rohan starts facing South, turns left twice, walks 30 meters each time, and ends up 25 meters East of his starting point. Hence, the correct answer is option (c).
- 34. Point S is to the south-west of point Q because it is both south of point P (which is south of Q) and west of point R (which is west of P). Hence, the correct answer is option (b).
- **35.** Rajan is 20 meters North of his original position. Hence, the correct answer is option (a).

EMBEDDED FIGURES

1. The correct figure is

Hence, the correct answer is option (a).

2. The correct figure is

9

Hence, the correct answer is option (a).

3. The correct figure is

Hence, the correct answer is option (c).

4. The correct figure is

Hence, the correct answer is option (a).

5. The correct figure is

Hence, the correct answer is option (a).

6. The correct figure is

Hence, the correct answer is option (d).

7. The correct figure is

Hence, the correct answer is option (d).

8. The correct figure is

is XX

Hence, the correct answer is option (c).

9. The correct figure is

10. The correct figure is \bigtriangledown

Hence, the correct answer is option (a).

11. The correct figure is

.

Hence, the correct answer is option (b).

12. The correct figure is

s .

Hence, the correct answer is option (a).

13. The correct figure is

Hence, the correct answer is option (c).

14. The correct figure is

Hence, the correct answer is option (b).

15. The correct figure is



Hence, the correct answer is option (b).

16. The correct figure is

 \mathbb{B}

Hence, the correct answer is option (a).

17. The correct figure is

is

Hence, the correct answer is option (b).

18. The correct figure is



Hence, the correct answer is option (b).

19. The correct figure is

20. The correct figure is

Hence, the correct answer is option (b).

21. The correct figure is

Hence, the correct answer is option (d).

22. The correct figure is



Hence, the correct answer is option (c).

23. The correct figure is

Hence, the correct answer is option (d).

24. The correct figure is

s .

Hence, the correct answer is option (c).

$\left< 10 \right>$ CUBES AND DICE

1. If two dice have the same face value in the given image then their clockwise or anti-clockwise number are known as opposite numbers in dice.

In the first and second dice, the number 3 is common.

The number opposite to 4 is 3.

- In the first and second dice, the number 6 is common. The left numbers will be opposite each other writing them anti-clockwise starting from 6. If 1 on top then 5 will be at bottom. Hence, the correct answer is option (b).
- 3. Clockwise after common digit which is 3. Remaining will be opposite. So 6 will be opp of 5. Hence, the correct answer is option (c).

$$\begin{array}{ccc}
3 & 5 \\
3 & 6 \\
\end{array} \begin{pmatrix}
1 \\
2
\end{array}$$

- 4. In this alternates are opposite

 opposite 4
 opposite 6
 opposite 5
 So 3 will be opp to 5 dots.

 Hence, the correct answer is option (c).
- In this given solid there are 9*2 cubes. So total 18 are there. Hence, the correct answer is option (c).
- **6.** In this question notice that 1 and 6 are adjacent in dice (ii) and 2 and 6 are adjacent in (iii) therefore neither 6, 2 and 1 can be opposite to 3 in dice (i). Since 4 is not present in dice (i) and all other number are adjacent to 3, we can conclude that 4 is the number on the bottom of the face of dice (i) Hence, the correct answer is option (a).
- In the third dice 1 will be at the bottom of the dice. Hence, the correct answer is option (a).
- **8.** In this question 3 will lie opposite to the number 6. Hence, the correct answer is option (c).
- **9.** In this question 6, 3 will be combinations that shows the number at the adjacent surface of the number of 4 because 2 is opp to 4 so it cant be adjacent.

Hence, the correct answer is option (d).

- 10. In this question, 6 doesn't appear on any one of the adjacent surfaces of the number 3 because 6 is opposite to 3. Hence, the correct answer is option (b).
- 11. Given,

Red is on the bottom. Black is on top (opposite of red). Green is between red and black. Blue and brown are next to each other. Blue and white are next to each other. So, the green side touches: Red (bottom) Black (top) Blue (front) The four colors next to green are: Black, Brown, Blue, White. Hence, the correct answer is option (d).

 So, based on statements (I), (II), and (V), we can deduce that black is on top, because red is at the bottom and black is opposite red. Hence, the correct answer is option (c).

- 13. So, looking at these, statement (III) doesn't add any new information because the fact that the green side is between red and black can be deduced once we know red and black are opposite each other. Thus, the statement that adds no new information is: (b) III. Hence, the correct answer is option (b).
- **14.** In this question,

White is adjacent to brown, as this is the false statement after the swaps. between white and brown are opposite. Hence, the correct answer is option (b).

With a 10 × 10 × 10 cube, which is made up of: 10 × 10 × 10 = 1000 smaller cubes. After remove a layer of 1 × 1 × 1 cubes.

From the cube reduce each dimension by 2,

Length = 10 - 1 - 1 = 8Breadth = 10 - 1 - 1 = 8

Height = 10 - 1 - 1 = 8

So, $8 \times 8 \times 8 = 512$ cubes.

Hence, the correct answer is option (c).

16. For 5 × 5 × 5 cube Add 1 × 1 × 1 layer add each dimension with 2 Length = 5 + 1 + 1 = 7 Breadth = 5 + 1 + 1 = 7 Height = 5 + 1 + 1 = 7 So, cube = 7 × 7 × 7 = 343

Hence, the correct answer is option (b).

- 17. In this question by dice (ii) and (iv)
 - 4 <-> 2 (opposite)
 By dice (i) and (ii)
 1 <-> 6 (opposite)
 Then remaining
 5 will be opposite the one with three dots
 Hence, the correct answer is option (c).
- **18.** Each standard dice has six faces, and the sum of the numbers on opposite faces is always 7.

The top face shows 4. The opposite face will be 7 - 4 = 3.

The top face shows 3. The opposite face will be 7 - 3 = 4.

The top face shows 1. The opposite face will be 7 - 1 = 6.

The top face shows 5. The opposite face will be 7 - 5 = 2.

Now, we add up the numbers on the faces touching the ground (the opposite faces):

3 + 4 + 6 + 2 = 15Hence, the correct answer is option (c).

- 19. In this question, By dice (i) and (ii) Each corresponding side are opposite C opposite D, F opposite A and E opposite B So A will be opposite to F Hence, the correct answer is option (c).
- **20.** In this figure there are 20 cubes $5 \times 3 + 5 \times 1 = 20$ Hence, the correct answer is option (a).
- **21.** In this question 1 and 4 only is correct Hence, the correct answer is option (a)
- **22.** In this question the opposite to 1 will be 6. Hence, the correct answer is option (c).
- **23.** In this question when 4 is at the bottom, then by clokwise rotation with common number 1.

1 will be on the top.

Mastering Aptitude and REASONING

7

> ANALOGY AND CLASSIFICATION

1. In pair VRNP : PNRV



On observing the mapping, we find the letters get reversed. So we get :



Hence, the correct answer is option (d).

- 2. We have the pair USPL and KMPT. On observing the pattern here we find :
 - $U \rightarrow K$ (- 10 letters)
 - $S \rightarrow M$ (- 6 letters)
 - $P \rightarrow P$ (no change)
 - $L \rightarrow T$ (+ 10 letters)

Similarly, LJGC follows the above pattern

L (backward by 10): $L \rightarrow B$ J (backward by 6): $J \rightarrow D$ G (no change): $G \rightarrow G$ C (forward by 10): $C \rightarrow M$ So, LJGC becomes BDGM. Hence, the correct answer is option (b).

3. We have the pair EFGH and STUV.

Here, on observing the pattern, we find:

 $\begin{array}{ccc} E \rightarrow S & (+14 \mbox{ letters}) \\ F \rightarrow T & (+14 \mbox{ letters}) \\ G \rightarrow U & (+14 \mbox{ letters}) \\ H \rightarrow V & (+14 \mbox{ letters}) \end{array}$ Similarly, ABCD follows the above pattern A (forward by 14): $A \rightarrow O$ B (forward by 14): $B \rightarrow P$ C (forward by 14): $C \rightarrow Q$ D (forward by 14): $D \rightarrow R$ So, ABCD becomes OPQR. Hence, the correct answer is option (b).

4. We have the pair TVXZ and BDFH. On observing the pattern we find :

 $T \rightarrow B \quad (-18 \text{ letters})$ $V \rightarrow D \quad (-18 \text{ letters})$ $X \rightarrow F \quad (-18 \text{ letters})$ $Z \rightarrow H \quad (-18 \text{ letters})$

Similarly, DFHJ follows the above pattern

D (backward by 18): $D \rightarrow L$

F (backward by 18): $F \rightarrow N$

H (backward by 18): $H \rightarrow P$

J (backward by 18): $J \rightarrow R$

So, DFHJ becomes LNPR.

Hence, the correct answer is option (c).

5. We have the pair 10 : 55. Now, $10 \times 5 + 5 = 50 + 5 = 5$

$$0 \times 5 + 5 = 50 + 5 = 55.$$

Similarly,

 $7 \times 5 + 5 = 35 + 5 = 40.$

Hence, the correct answer is option (a).

6. We have pair of 122 : 170

 $(11^2 + 1) = 122$ $(11 + 2)^2 + 1 = 170$

Similarly, 290

 $(17^2 + 1)$ $(17 + 2)^2 + 1 = ?$ $19^2 + 1 = 361 + 1 = 362$

Hence, the correct answer is option (a).

- We have a pair 0.01 : 0.0001 Here 0.0001 is square of 0.01. So, (0.04)² = 0.0016 Hence correct answer is option (b).
- 8. In this pattern, we have 4673 : 2451Following the pattern (*x* – 2222) we will get (4673 – 2222) = 2451 Similarly,

7528 - 2222 = 5306

- **9.** Here, a helicopter is a type of aircraft, and an almond is a type of nut. Hence, the correct answer is option (b).
- In this question, a peacock is associated with India, and a kangaroo is associated with Australia. Hence, the correct answer is option (c).
- Here, a triangle is the base shape of a triangular prism, and a square is the base shape of a cube. Hence, the correct answer is option (a).
- **12.** Here, a cistern holds water, just as a book holds knowledge. Hence, the correct answer is option (d).
- **13.** Here, a car is a type of automobile, and a cat is a type of animal. Hence, the correct answer is option (c).
- **14.** Here, a mother is a type of parent, and a sister is a type of sibling. Hence, the correct answer is option (b).
- **15.** Here, Mike Tyson is known for boxing, and Leander Paes is known for tennis.

Hence, the correct answer is option (d).

16. In this question, we observe two reverse figures are joint to .



Hence, the correct answer is option (c)

17. In this question \land is reversed with circles on 3 vertices \checkmark



Hence, the correct answer is option (d).

18. In this question,

For first figure it is triangle with 3 sides with the value 3^3 .

 $3 \times 3 \times 3 = 27$ Similarly, for Square, has 4 sided.

So, $4 \times 4 \times 4 \times 4 = 256$

Hence, the correct answer is option (d).

- **19.** In this question diagonals of given figures are shown Hence, the correct answer is option (a).
- 20. In this question : shows non shaded part in removed. So pattern followed is : .

21. The numbers 853, 981, and 381 are all odd numbers, while 734 is an even number.So, 734 is the odd one out.

Hence, the correct answer is option (c).

- **22.** In all the numbers 2518, 1315 and 2709, only the number except 8314, the sum of first three digits is equal to the unit's digit: Hence, the correct answer is option (d).
- 23. 345, 365, and 305 are odd numbers (they end in 5).380, however, is an even number (it ends in 0).So, 380 is the odd one out because it's the only even number in the group. Hence, the correct answer is option (c).
- 24. In this question options (a) VUT, (b) PON, and (c) FED, the letters follow a reverse alphabetical order (e.g., V, U, T; P, O, N; F, E, D). But DON doesn't follow the same. Hence, the correct answer is option (d).
- **25.** In the sequence

IJRQ breaks the rule, so (d) is the correct option.

- 26. In this given sequence (a) MORS (b) EGJ and ACFG follow the same pattern
 - $\begin{array}{l} M \rightarrow O & (+2 \mbox{ letters}) \\ O \rightarrow R & (+3 \mbox{ letters}) \\ R \rightarrow S & (+1 \mbox{ letter}) \end{array}$

But (c) PQUW breaks the pattern:

```
\begin{array}{ll} P \rightarrow Q & (+1 \mbox{ letter}) \\ Q \rightarrow U & (+4 \mbox{ letters}) \\ U \rightarrow W & (+1 \mbox{ letter}) \end{array}
```

Hence, the correct answer is option (c).

- **27.** In the given options, the pattern is based on consecutive letters with a consistent interval between the letters.
 - (a) ABDE: The letters follow a pattern of skipping one letter each time:

$$\begin{array}{l} A \rightarrow B \quad (1 \mbox{ letter}), \\ B \rightarrow D \quad (2 \mbox{ letters skipped}), \\ D \rightarrow E \quad (1 \mbox{ letter}). \end{array}$$

Same pattern is followed for FGIJ and QRTU

but KLOP doesn't follow the same.

Hence, the correct answer is option (c).

28. In this question,

(a) DEAR, (b) NEAR, and (c) BEAR are all common English words, but

KEAR is not a common English word. Hence, the correct answer is option (d).

29. In this question,

7 is a prime number, and it is not a multiple of any other number except 1 and itself.

Thus, 7 is the odd one out because it is the only prime number, while the others are composite numbers.

Hence, the correct answer is option (c).

30. In this pattern,

Spoon, Fork, and Chopsticks are all utensils used for eating where tongs used for grabbing or serving food, not for directly eating it. Hence, the correct answer is option (c).

- 31. In this question Iron, Aluminium, and Silver are all metals.Where, wood is odd one.Hence, the correct answer is option (b).
- 32. In this question, Japan, Bhutan, and Nepal are all countries. Where, Beijing is the capital city of China, not a country. So, Beijing is odd one here. Hence, the correct answer is option (d).
- 33. In this question Bus, Motorcycle, and Car are all motorized vehicles.Where, Bicycle is non-motorized and requires physical pedaling for movement.

So, (c) is odd one here.

Hence, the correct answer is option (c).

- 34. In this question Nose, Hand, and Knee are all external body parts. Where, Lungs are internal organs located inside the body. So, lungs are odd one here. Hence, the correct answer is option (b).
- **35.** In this question (d) figure is odd if we focus on the orientaion.

Hence, the correct answer is option (d)



36. In this question fig (a), (c) and (d) are dividing the shape in equal 4 parts, but fig (b) is odd one here.

Hence, the correct answer is option (b)



37. H₁₉ L₁₅ C₂₃ G₂₆ In this question if we check numbers 19 odd number
15 odd number 23 odd number26 even numberSo, the number 26 is the only even number.Hence, the correct answer is option (d).

38. In this question fig (c) is odd as this is differently align in circle with represent to all other figure.

Hence, the correct answer is option (c)

39. In this question all the fig (b), (c) and (d) are alphabtes here (a) is a mathematical expression.

Hence, the correct answer is option (a)

40. In this question all the fig (a), (b), (c) are dividing the shape in equal parts where option (d) is odd one

Hence, the correct answer is option (d)



2 CODING AND DECODING

- Here, 'LUTE' is written as 'MUTE'(L changes to M). And FATE' is written as 'GATE' (F changes to G). Similarly, 'BLUE' will be written as CLUE. Hence, the correct answer is option (a).
- 2. Here, DELHI is coded as CCIDD, the pattern followed is :

 $D \rightarrow C \quad (-1 \text{ letter})$ $E \rightarrow C \quad (-2 \text{ letters})$ $L \rightarrow I \quad (-3 \text{ letters})$ $H \rightarrow D \quad (-4 \text{ letters})$ $I \rightarrow D \quad (-5 \text{ letters})$

 $B \rightarrow A \quad (-1 \text{ letter})$ $O \rightarrow M \quad (-2 \text{ letters})$ $M \rightarrow J \quad (-3 \text{ letters})$ $B \rightarrow X \quad (-4 \text{ letters})$ $A \rightarrow V \quad (-5 \text{ letters})$ $Y \rightarrow S \quad (-6 \text{ letters})$

So, BOMBAY would be coded as AMJXVS. Hence, the correct answer is option (b).

Similarly, BOMBAY:

3. Given:

 $A \rightarrow 2$, $D \rightarrow 8$, $K \rightarrow 22$, TEN $\rightarrow 78$

with these values the value of B will be 4 and value of E will be 10 and L will be 24.

Hence we have all the values

 $\begin{array}{cccc} A \rightarrow 2, & B \rightarrow 4, & C \rightarrow 6, & D \rightarrow 8 \\ E \rightarrow 10, & K \rightarrow 22, & L \rightarrow 24, & TEN \rightarrow 78 \\ rly \end{array}$

Similarly

BEL = 4 + 10 + 24 = 38

- 4. Here, SEASON has 6 letters → 6 × 10 = 60, but it's coded as 50. (60 10) FOCUS has 5 letters → 5 × 10 = 50, but it's coded as 40. (50 10) Similarly, 'CHALLENGE has 9 letters.
 9 × 10 = 90 and subtracting 10 gives us 80. Hence, the correct answer is option (a).
- 5. Here, BAKE is coded as 5796.

```
B is the 2nd letter of the alphabet \rightarrow 5
                 A is the 1st letter \rightarrow 7
                 K is the 11th letter \rightarrow 9
                 E is the 5th letter \rightarrow 6
     and
     FIRE is coded as 3146.
                 F is the 6th letter \rightarrow 3
                 I is the 9th letter \rightarrow 1
                 R is the 18th letter \rightarrow 4
                 E is the 5th letter \rightarrow 6
     Here, FEAR is mapped from above alphabets as
                 F \rightarrow 3, E \rightarrow 6, A \rightarrow 7, R \rightarrow 4
     So, FEAR is coded as 3674.
    Hence, the correct answer is option (b).
6. Here, HEALTH is coded as GDZKSG.
                                  H \rightarrow G (-1 letter)
                                   E \rightarrow D (-1 letter)
                                   A \rightarrow Z (-1 letter)
                                   L \rightarrow K (-1 letter)
                                   T \rightarrow S (-1 letter)
                                  H \rightarrow G (-1 letter)
    It is shifted back by 1.
     Similarly, NORTH
                                   N \rightarrow M (-1 letter)
                                   O \rightarrow N (-1 letter)
                                                50
```

$$\begin{split} R &\rightarrow Q \quad (-1 \text{ letter}) \\ T &\rightarrow S \quad (-1 \text{ letter}) \\ H &\rightarrow G \quad (-1 \text{ letter}) \\ \text{So, NORTH will be coded as MNQSG.} \end{split}$$

Hence, the correct answer is option (d).

7. Here, TOP is coded as SNO.

 $T \rightarrow S \quad (-1 \text{ letter})$ $O \rightarrow N \quad (-1 \text{ letter})$ $P \rightarrow O \quad (-1 \text{ letter})$

Similarly for FREEZE

```
F \rightarrow E \quad (-1 \text{ letter})
R \rightarrow Q \quad (-1 \text{ letter})
E \rightarrow D \quad (-1 \text{ letter})
E \rightarrow D \quad (-1 \text{ letter})
Z \rightarrow Y \quad (-1 \text{ letter})
E \rightarrow D \quad (-1 \text{ letter})
```

So, FREEZE will be coded as EQDDYD. Hence, the correct answer is option (a).

8. Given DUST \rightarrow WFHG

Here the pattern is

$D \rightarrow W$	(Here D is 4th letter from starting
$U \rightarrow F$	and W is 4th letter from end, this
$S \rightarrow H$	patter is followed by each letter)
$T \rightarrow G$	

Similarly,

 $K \to P, \quad I \to R, \quad N \to M, \quad G \to T$

Hence, the correct answer is option (b).

9. Here, BEAR is coded as EHDU.

B to E: $B \rightarrow E$ (+3 letters) and each letter follow the same pattern

```
E to H: E \rightarrow H (+3 \text{ letters})
```

```
A to D: A \rightarrow D (+3 letters)
```

```
R to U: R \rightarrow U (+3 letters)
```

Similarly, TIGER

 $T \rightarrow W (+3 \text{ letters})$ $I \rightarrow L (+3 \text{ letters})$ $G \rightarrow J (+3 \text{ letters})$ $E \rightarrow H (+3 \text{ letters})$ $R \rightarrow U (+3 \text{ letters})$

So, "TIGER" would be coded as WLJHU. Hence, the correct answer is option (b). 10. Here, MIRACLE is coded as ACEILMR. $M I R A C L E \rightarrow A C E I L M R.$ Similarly, BUILDER So, BUILDER would be coded as BDEILRU. Hence, the correct answer is option (b). 11. Here, Fox is coded as 45. Take the positions of each letter in the alphabet: $F \rightarrow 6$, $O \rightarrow 15$, $X \rightarrow 24$ $6 + 15 + 24 \rightarrow 45.$ Similarly for BOX $B \rightarrow 2$, $O \rightarrow 15$, $X \rightarrow 24$ $2 + 15 + 24 \rightarrow 41.$ Hence, the correct answer is option (a). 12. Here, BOX is coded as 213. $B \rightarrow 2$, O = 1, $X \rightarrow 3$ and BITTER as 207749. $B \rightarrow 2$, $I \rightarrow 0$, $T \rightarrow 7$, $E \rightarrow 4$, $R \rightarrow 9$ Similarly, BOXER $B \rightarrow 2$, $O \rightarrow 1$, $X \rightarrow 3$, $E \rightarrow 4$, $R \rightarrow 9$ Thus, BOXER is coded as 21349. Hence, the correct answer is option (d). 13. Here, 'ROBE' is written as '5136'. $R \rightarrow 5$, $O \rightarrow 1$, $B \rightarrow 3$, $E \rightarrow 6$ and BIND's written as '3792'. $B \rightarrow 3$, $I \rightarrow 7$, $N \rightarrow 9$, $D \rightarrow 2$ Then, 'RIDE' $R \rightarrow 5$, $I \rightarrow 7$, $D \rightarrow 2$, $E \rightarrow 6$ So, RIDE would be written as 5726. Hence, the correct answer is option (b). 14. Here, 'GOLD' is written as '5124. $G \rightarrow 5$, $O \rightarrow 1$, $L \rightarrow 2$, $D \rightarrow 4$ and 'LIVE' is written as '2983'. $L \rightarrow 2$, $I \rightarrow 9$, $V \rightarrow 8$, $E \rightarrow 3$ Now for 'VOID'

 $V \rightarrow 8$, $O \rightarrow 1$, $I \rightarrow 9$, D = 4So, VOID is written as 8194. Hence, the correct answer is option (a). 15. Here, JOT is 'OTY'. $J \rightarrow O$ is a forward shift of 5 letters. (Each letter is same) $O \rightarrow T$ $T \rightarrow Y$ Similarly, for 'HIS'? $I \rightarrow N$, $S \rightarrow X$ $H \rightarrow M$, So, HIS becomes MNX. Hence, the correct answer is option (d). 16. Here, 'NUMBER' is 'MVLCDS'. $N \rightarrow M$ (+1 letter) $U \rightarrow V$ (-1 letter) $M \rightarrow L$ (+1 letter) $B \rightarrow C$ (-1 letter) $E \rightarrow D$ (+1 letter) $R \rightarrow S$ (-1 letter) Similarly, 'SECOND' $S \rightarrow R$ (-1 letter) $E \rightarrow F$ (+1 letter) $C \rightarrow B$ (-1 letter) $O \rightarrow P$ (+1 letter) $N \rightarrow M$ (-1 letter) $D \rightarrow E$ (+1 letter) So, SECOND is coded as RFBPME. Hence, the correct answer is option (c). 17. Here, '256' is the code for 'BOY. $B \rightarrow 2$, $O \rightarrow 5$, $Y \rightarrow 6$ and '3517' is the code for 'HOUR'. $H \rightarrow 3$, $O \rightarrow 5$, $U \rightarrow 1$, $R \rightarrow 7$ Similarly, 7126 $R \rightarrow 7$, $U \rightarrow 1$, $B \rightarrow 2$, $Y \rightarrow 6$ Hence, the correct answer is option (a). 18. Here, 'DONKEY' is written as 'YEKNOD'. DONKEY : YEKNOD

Similarly, 'HORSE'

HORSE: ESROH

Hence, the correct answer is option (d).

19. Here, 'RESCUE' is coded as '372057'.

 $R \rightarrow 3$, $E \rightarrow 7$, $S \rightarrow 2$, $C \rightarrow 0$, $U \rightarrow 5$, $E \rightarrow 7$ and PROBLEM' is coded as '9348176'.

 $P \rightarrow 9$, $R \rightarrow 3$, $O \rightarrow 4$, $B \rightarrow 8$, $L \rightarrow 1$, $E \rightarrow 7$ Similarly, 'PROCURE'

 $P \rightarrow 9$, $R \rightarrow 3$, $O \rightarrow 4$, $C \rightarrow 0$, $U \rightarrow 5$, $R \rightarrow 3$, $E \rightarrow 7$ So, PROCURE will be coded as 9340537. Hence, the correct answer is option (a).

20. Here, 'METALS' is written as QIXEPW.

$$\begin{split} M &\rightarrow Q & (+ \ 4 \ shift) \\ E &\rightarrow I & (+ \ 4 \ shift) \\ T &\rightarrow X & (+ \ 4 \ shift) \\ A &\rightarrow E & (+ \ 4 \ shift) \\ L &\rightarrow P & (+ \ 4 \ shift) \\ S &\rightarrow W & (+ \ 4 \ shift) \end{split}$$

Similarly, CALCIUM

 $C \rightarrow G \quad (+ 4 \text{ shift})$ $A \rightarrow E \quad (+ 4 \text{ shift})$ $L \rightarrow P \quad (+ 4 \text{ shift})$ $C \rightarrow G \quad (+ 4 \text{ shift})$ $I \rightarrow M \quad (+ 4 \text{ shift})$ $U \rightarrow Y \quad (+ 4 \text{ shift})$ $M \rightarrow Q \quad (+ 4 \text{ shift})$

So, CALCIUM will be written as GEPGMYQ. Hence, the correct answer is option (c).

21. Here, Orange is called Butter.

Butter is called Soap.

Soap is called Ink.

Ink is called Honey.

Honey is called Sugar.

We use soap for washing clothes and here ink is called soap.

So ink is used for washing clothes.

Hence, the correct answer is option (d).

22. Here, Cushion is called Pillow. Pillow is called Mat.

Mat is called Bedsheet. Bedsheet is called Cover. Here mat will be spread on the floor but bedsheet called Mat Mat is called Bedsheet. Hence, the correct answer is option (b).

- 23. Here, Bat is called Racket. Racket is called Football. Football is called Shuttle. Shuttle is called Ludo. Ludo is called Carrom. Cricket played with bat. Here bat is called Racket. Hence, the correct answer is option (a).
- 24. Here, Paper is called Wood. Wood is called Straw. Straw is called Grass. Grass is called Rubber. Rubber is called Cloth. The furniture made of wood and here Wood is called Straw. Hence, the correct answer is option (c).
- 25. Here, Water is called Food. Food is called Tree. Tree is called Sky. Sky is called Wall. Tree grows a fruit and here Tree is called Sky. Hence, the correct answer is option (c).

3 COMPLEX FIGURES

- On labeling the figure we get Number of triangle = ABC, EDF, GAE, FBJ, GHC, JIC, HEB, AFI, IGD, BHE The total number of triangles are 10. Hence the correct answer is option (a).
- On labeling the figure we get Number of triangles = ABC, ABE, EFC, FCD, AFD, BFA, DCF, CBD, ABD, EAC, EBF, FAD. Total number of triangles are 12. Hence, the correct answer is option (a).



 On labeling the figure we get The number of square = ABCD, YZab, IJKF, EFHG, AGOX, LMON, TVWR, VUSW, PQSR, LVcN, VcOM. Hence, the total number of square are 11. Hence, the correct answer is option (c).



4. On the labeling the figure we get



Number of triangle = ABC, ADC, ABF, BFC, AFD, FCD, BEF, BFG, EFD, DFG, DEB, BGO, ABG, FBC, ADG, ECD, EBG, EDG, AED, ABE, BGC, DGC, BGC, BCD

E

Total number of triangles are 24. Hence, the correct answer is option (d).

- 5. On labeling the figure we get Number of triangles = EFG, EJF, JGE, FGL, FHK, KFI, FIB, GFM, MFL, GEL, HFI Total number of triangles are 11. Hence, the correct answer is option (a).
- On labeling the figure we get Number of squares = ABEH, ABbQ, ACNB, DBQO, CDJK, IJMN, JKON, KLPO, bQHE, RWHE, bNFE, OQHG, MNTS, NOUT, OPVU, STYX, TUZY, UVaZ, YZGF, bMSR, PQWV, RTFE, UWHG, TWHF, RVGE, RTEF, MPaX. Total number of squares are 27. Hence, the correct answer is option (d).
- 7. Here we have three straight line in drawing a triangle.
 Parallel to each side we have 3 straight lines.
 Hence, finally 3 × 3 = 9 straight lines inside the triangle.
 Hence, finally we have 9 + 3 = 12 straight lines.
 Hence, the correct answer is option (c). //



- 8. Here, 2 rectangles formed by combining four small rectangles (2×2) = 4.
 2 rectangles formed by combining six small rectangles (2×3) = 6.
 1 rectangle formed by combining eight small rectangles (2×4) = 8.
 Adding up all these = 6 + 4 + 8 = 18
 Hence, the correct answer is option (b).
- 9. On labeling the figure we get Triangles are = ABC, DEF, ADF, FEC, DBE. Total number of triangles are 5. Hence the correct answer is option (c).
- 10. On labeling the figure we get Total number of triangles = ABC, ADC, ADH, AHE, AEF, FEC, AEC, AGC, EGC, EIC, ADE, ICG, FEA, CEF, CIE. Here one large triangle has 5 small triangle. Total large triangle are 3. So, $3 \times 5 = 15$. Hence, the correct answer is option (c).















- 12. Here, one square containing 4 triangles. So, $4 \times 4 = 16$. Hence, the correct answer is option (b).
- **13.** Here, number of square $1^2 + 2^2 + 3^2 + 4^2 = 1 + 4 + 9 + 6 = 30$ Hence, the correct answer is option (c).
- 14. Now total triangles 1 + 2 + 3 + 4 = 10. Hence, the correct answer is option (a).

- 15. Here small square are 4 formed by the smallest grid unit and one large square formed by the outer boundary. Total squares = 4 + 1 = 5 Hence, the correct answer is option (b).
- 16. On labeling the figure we get Number of quadrilaterals = ABCE, AHCD, HFGB, DEFG, HBFG Total numbers of quadrilaterals are 5. Hence, the correct answer is option (c).
- 17. On labeling the figure we get In this figure the rectangles are = ABHG, AFMG, AEJI, EFKJ, IJLG, JKML, FBHM. Total rectangles will be $7 \times 4 + 1 = 29$. Hence, the correct answer is option (c).
- 18. On labeling the figure we get
 Number of triangles = ABC, DCE, DCI, ICE, DEH, DIF, IEG, FIG, FHG, AFH, HGB, ADF, ADH, HEB, AGB.
 Total number of triangles are 15.
 Hence the correct answer is option (d).
- **19.** Here, in the figure there are 2 large triangle containing 4 small triangles.



So, $4 \times 3 = 12$ There are 2 small unit triangles in the figures By adding all 12 + 2 = 14. Hence, the correct option is (a).

20. On labeling the figure we get Number of triangles = ACD, EAG, EGC, AGB, CBD, DGF, GBF, DGB, CGD, BGA, AGC, DGC.
Total number of triangles are 12.
Hence, the correct answer is option (c).











- 21. There are two smaller triangles on the left and right sides of the large triangle.Three smaller triangle within the large triangle makes total 6 triangles.Hence, the correct answer is option (c).
- 22. On labeling the figure we get Number of triangles are = ABC, IBJ, GBF, GBE, EBF, DNH, INJ, KNM, KNL, LNM, IDG, FHJ, IAK, JCM. Add all we will get 14 triangles. Hence, the correct answer is option (b).
- 23. In the given figure there are 8 squares : Square = AEHC, KLMI, EFIH, LGJM, FBDI, LGJM, KFIP, ALMC Total number of squares are 8 × 4 = 32. Hence, the correct answer is option (d).
- 24. On labeling the figure : Number of triangles : GEH, GEK, KEH, GAE, GAI, IAE, EBH, EBJ, JBH Total number of triangles are 9. In other half rectangle there will again 9 triangles = 9 + 9 = 18.

And 2 triangles are EHF, EGF. 18 + 2 = 20. Hence, the correct answer is option (a).

- **25.** If we look the figure in square we have total 14 triangles. And in ABC there are 12 triangles. So total 14 + 12 = 26 triangles. And total 5 square are there. Hence, the correct answer is option (d).
- 26. Given figure is labelled. Number of rectangles = 7. ABJI, BCKJ, JKEF, IJFG, ACKI, IKEG and ACEG Hence correct answer is option (d).









Ē

F

G

- 27. On labeling the figure we get In this figure there are 16 small triangles. ABF, ABK, AKF, BIF, BIK, KIF, BCI, IFG So, total small triangles are $= 8 \times 2 = 16$. Medium triangle are = 8Large triangle are = 8So, total = 16 + 8 + 8 = 32Hence, the correct answer is option (d).
- 28. Triangles are = ABC, FBH, FDG, GEH, DGE, DBE, IGJ, ADJ, IECTotal number of triangles are 9.Hence, the correct answer is option (d).
- **29.** On labeling the figure we get The number of triangles are = DBE, DGI, IFJ, JHE, AFC, AGB, BHC. Total number of triangles are 7. Hence, the correct answer is option (b).
- 30. On labeling the figure we get The total number of triangles are 24. As there 12 small triangles and 6 small triangles. Total triangles are = 12 + 6 + 6 = 24. Hence, the correct answer is option (b).



ightarrow NUMBER PATTERNS

1. The pattern is the middle number is the sum of top and bottom number divided by 2.

Fig. 1.
$$\frac{3+27}{2} = 15$$

Fig. 2. $\frac{6+56}{2} = 31$

Fig. 3.
$$\frac{9+81}{2} = 45$$

Hence, the correct answer is option (a).

2. In first figure, the pattern is

$$5+4+8+7=24$$

 $9+8+6+1=24$

In second figure, 2 + 19 + 9 + 9 = 39 11 + 7 + 6 + 15 = 39Similarly, in third figure 14 + 2 + 7 + 8 = 29 3 + 10 + x + 3 = 29 x + 16 = 29x = 13

Hence, the correct answer is option (c).

3. In figure 1 the pattern is

 $12 \times 4 = 48$ $6 \times 4 = 24$ then $\frac{48}{24} = 2$

In figure 2

	$8 \times 5 = 40$
	$5 \times 1 = 5$
thon	<u>56</u> _ «
then	14 - 8

Similarly in 3rd figure

$$8 \times 7 = 56$$

$$7 \times 2 = 14$$
then
$$\frac{56}{14} = 4$$

Hence, the correct answer is option (b).

4. Pattern is

 $2^{2} = 4$ $3^{2} = 9$ $4^{2} = 16$ $5^{2} = 25$ Now, opposite to the box columns 4. $4 \times 2 = 8$ $9 \times 3 = 27$ $16 \times 4 = 64$ $25 \times 5 = 125$

Hence, the correct option is (b).

5. In fig 1 the pattern is



Q = 17 letter G = 7 x = 24Q + G = 17 + 7 = 24B = 2 (letter) W = 23 Y = 25 (25 letter) B + W = Y2 + 23 = 25Similarly in 3rd figure X = ? S = 19 V = 22X + 19 = 22 $\mathbf{x} = 3$ 3rd letter is C. Hence, the correct answer is option (d). 6. Raw wise = 29 + 13 + 18 = 6030 + 27 + 3 = 6033 + ? + 19 = 60 Missing number is 8. Hence, the correct answer is option (d). 7. On analysis, we get Column wise : B(+2) = D and D(+3) = GG(+3) = J and J(+4) = NSo, in third column N(+4) = R and R(+5) = WSo, the missing alphabate is W. Hence the correct option is (b). 8. The pattern is square of two consecutive number and produce of those number.

Fig. (1): $2^2 = 4$ $3^2 = 9$ $2 \times 3 = 6$ Fig. (2): $3^2 = 9$ $4^2 = 16$ $3 \times 4 = 12$ Fig. (3): $4^2 = 16$ $5^2 = 25$ $4 \times 5 = 20$

Hence, the correct option is (b).

9. Study the followed pattern in the given figure

12² + 8² = 144 + 64 = 20814² + 9² = 196 + 81 = 277

Hence, the correct answer is option (b).

- 10. Study the pattern in the given figure. Fig. 1. $3 \times 3 + 5 \times 6 = 9 + 30 = 39$ Fig. 2. $4 \times 4 + 7 \times 5 = 16 + 35 = 51$ Fig. 3. $3 \times 4 + 5 \times 5 = 12 + 25 = 37$ So, the missing number is 37. Hence, the correct answer is option (c).
- 11. The pattern is

Fig. 1. $9 + 8 + 7 = 24 = 24 \times 2 = 48$ Fig. 2. $8 + 6 + 5 = 19 = 19 \times 3 = 57$ Similarly in fig. 3.

 $7 + 6 + 4 = 17 = 17 \times 4 = 68$

So, the missing number is 68.

Hence, the correct option is (a).

12. In the first raw the patterns is

$$a \times b + b$$
$$8 \times 10 + 10 = 90$$

Similarly in second raw

$$6 \times 9 + 9 = 63$$

Then the third raw

$$4 \times x + 8 = 40$$
$$4 x = 32$$
$$x = 8$$

Hence, the correct answer is option (d).

- 13. The pattern is column wise and rowwise sum is same i.e., 12.
 - 6 + 4 + 2 = 121 + 8 + 3 = 125 + 0 + 7 = 12

Missing number is 0.

Hence, the correct option is (a).

14. Observing the numbers in the pattern we get



64 will take the place of '?'.

(c) is the correct option.

8	10	90
6	9	63
4	?	40

15. In the first raw, the patterns is : 1×5 , 5×5 , 25×5 \downarrow \downarrow \downarrow 2 25 125 = 125Similarly in second raw 3×4 12×4 , 192 $x \times 4$, \downarrow \downarrow \downarrow 12 192 48 Hence, the correct answer is option (c). 16. In first figure the pattern is 62 - 2 = 6018 - 18 = 060 + 0 = 60Same in second figure 52 - 20 = 3226 - 18 = 832 + 8 = 40Similarly 62 - 24 = 3819 - 23 = -438 + (-4) = 34Hence, the correct answer is option (c). 17. In the first raw the pattern is $9 \times 5 = 45$ $\frac{45}{3} = 15$ then Similarly, $8 \times 6 = 48$ $\frac{48}{3} = 16$ So,

Then $9 \times 4 = \frac{36}{3} = 12$

Hence, the correct answer is option (a).

18. The patter is

Raw wise

 $\begin{array}{c} B (+3) \rightarrow E (+4) \rightarrow I \\ G (+3) \rightarrow J (+4) \rightarrow N \\ L (+3) \rightarrow O (+4) \rightarrow S \end{array}$

So, the missing alphabate is L. Hence, the correct answer is (d).

1	5	25	125
3	12	?	192
7	14	28	56



19. The pattern is

Columnwise

$$Q (-1) \rightarrow P (-2) \rightarrow N$$
$$T (-1) \rightarrow S (-2) \rightarrow Q$$
$$W (-1) \rightarrow V (-2) \rightarrow T$$

So, the missing alphabate is W. Hence, the correct option is (d).

- **20.** The pattern is
 - Fig. 1. 2 + 8 + 6 + 3 + 10 = 29Fig. 2. 7 + 4 + 9 + 6 + 15 = 41Fig. 3. 8 + 7 + 6 + 8 + 20 = 49So, the missing number is 49. Hence, the correct option is (a).
- **21.** According to figure :
 - $2 \times 2 1 = 3$ $3 \times 2 - 1 = 5$ $5 \times 2 - 1 = 9$ $9 \times 2 - 1 = 17$, so 17 is the answer. Hence, the correct answer is option (b).
- **22.** The pattern is
 - $1 \times 1 = 1$ $5 \times 5 = 25$ $9 \times 9 = 81$

So, the missing number is 81. Hence, the correct option is (b).

- 23. The pattern is the given figure $G \rightarrow 7, Y \rightarrow 22, N \rightarrow 2, Q \rightarrow 17$ So, the missing number is 17. Hence, the correct answer is (b).
- 24. The pattern is given figure Columnwise 6+10+8=24 8+22+6=36Sum of column have a difference of 6. So, 7+16+7=30

So, the missing number is 7. Hence, the correct answer is option (a).

25. In first figure the pattern is $(12 - 4) \times 4 = 32$ Similarly $(18 - 9) \times 4 = 36$

Then $(23 - 4) \times 4 = 76$





26. In the first column the pattern is

 $5 + 6 \rightarrow 11 \times 11 = 121$ $6 + 9 \rightarrow 15 \times 15 = 225$ $8 + 10 \rightarrow 18 \times 18 = 324$ Missing number is 225. Hence, the correct answer is option (a). **27.** The pattern is 2^1 , 2^2 , 2^3 , 2^4 In second raw 3¹, 3², 3³, 3⁴ Similarly, in the third raw

 $4^1 = 4$ $4^2 = 16$ $4^3 = 64$ $4^4 = 256$

Hence, 256 will replace?

None of the given option is matching.

28. In this figure the pattern is $5^2 + 7^2 = 25 + 49 = 74$. Similarly, $10^2 + 9^2 = 100 + 81 = 181$. Hence, the correct answer is option (d).

29. In this question the pattern is

 $9 \times 3 = 27$ 27 + 1 = 28

Similarly

$$253 \times 9 = 2277$$

 $2277 + 1 = 2278$

Hence, the correct answer is option (a).

2	n	
5	υ	

Game level	1	2	3	4	5	6	7
Score	3	6	10	15	21	28	?
The difference b	oetween	score is					

3 = 6 (3)
6 = 10 (4)
10 = 15 (5)
15 = 21 (6)
21 = 28 (7)
28 = ? (8)

So, 28 + 8 = 36

So, 36 will replace question mark.

5	6	8
6	9	10
121	?	324

2	4	8	16
3	9	27	54
4	16	64	?





RANKING TEST

5

1. Here, in a row of 40 boys where Amit is 14 from right. Then from left he will be 27th.

$$(40 - 14 + 1)$$

Hence, the correct answer is option (b).

2. Given, Tarun's rank from the top = 9 Tarun's rank from the bottom = 38 So, the total number of students in the class will be 9 + 38 - 1 = 46

Thus, there are 46 students in the class. Hence, the correct answer is option (c).

- Nama's position from right is 12th and from left his position is 4th, it means total boys are 15.
 So, 13 boys need to add to become 28 boys.
 Hence, the correct answer is option (a).
- 4. Varun's rank from the last is 17th and total students are 39. Varun's rank from the start will be: Varun's rank from the start = 39 17 + 1 = 23 Preeti is 7 ranks ahead of Varun, so her rank from the start will be = 23 7 = 16. So, Preeti's rank from the start is 16th Hence, the correct answer is option (c).
- 5. Tarun is 10th from the front.



Rohan is 25th from behind, and since there are 50 people in total, Rohan's position from the front=50 - 25 + 1 = 26

then Dinesh will be
$$=\frac{10+26}{2}=\frac{36}{2}=18$$

So, Dinesh occupies the 18th position from the front. Hence, the correct answer is option (d)

6. Simran ranks 23rd from the top and 36th from the bottom in a class then total students will be = 23 + 36 - 1 = 58.

 Hemant's position from the right end is 15th and from the left end is 4th. Total boys = 15 + 4 - 1 = 18.



If we want there to be 30 boys in the line, the number of boys that need to be added is = 30 - 18 = 12.

Hence, the correct answer is option (a).

- 8. Here, one tree is sixth from either end of the row. This means the tree is the 6th from the left end and also the 6th from the right end. So, the total number of trees in the row will be 5(trees on the left) + 1 (the tree in question) + 5(trees on the right) = 11 So, 11 tree will be there. Hence, the correct answer is option (b).
- 9. Here, Sumit's current rank from the top is 14th in a group of 25 students. If we add 3 more students in total then total will be 25 + 3 = 28 So Sumit's position will remain same because the new students are added at the bottom.

Hence, the correct answer is option (a).

- Here, The rank of the girl is 7th from the top and 28th from the bottom. So, the total girls will be = 7 + 28 1 = 34. If we want the total number of girls to be 50, the number of additional girls needed will be 50 34 = 16. So, 16 girls are needed to make it 50. Hence, the correct answer is option (b).
- Here, one tree is 5th from either end of the row. This means there are 4 trees to the left and 4 trees to the right of this tree.
 So, the total number of trees in the row is 9.
 Hence, the correct answer is option (b).
- Here, Rashmi and Shubham are ranked ninth and thirteenth from the top in a class of 57 students.
 Then Rashmi's rank from the bottom = 57 9 + 1 = 49 and Shubham's rank from the bottom=57 13 + 1 = 45 Thus, their respective ranks from the bottom are 49th and 45th. Hence, the correct answer is option (b).

13. Given, Peter is sitting 14th from the left. Kabir is sitting 7th from the right. There are 4 boys between Peter and Kabir. As there are 4 boys between peter and Kabir so, Kabir must be in the 19th position from the left.

If Kabir is in the 19th position from the left, and he is 7th from the right, the total number of boys in the row is 19 + 7 - 1 = 25. Hence, the correct answer is option (a).

- 14. Here, one tree is eighth from either end of the row. To find the total number of trees in the row, we add 7 + 1 + 7 = 15. Thus, the total number of trees in the row is 15. Hence, the correct answer is option (a).
- 15. Formula for rank from last is Rank from the last=Total students – Rank from the top + 1 Here given rank from top is 12th and total students are 46 So, rank from the last = 46 – 12 + 1 = 35 Hence, the correct answer is option (b).

16. Formula for total girls will be

- Total girls = Rank from the left + Rank from the right 1 Given rank of neha from right is 15 and from left is 18th Total girls will be 18 + 15 - 1 = 32. Hence, the correct answer is option (b).
- **17.** Here, Given:
 - Raman's rank from the top = 22 Total number of students = 50 So, his rank from the bottom will be 50 - 22 + 1 = 29Thus, Raman's rank from the bottom is 29th. Hence, the correct answer is option (b).
- 18. Here Given:

Vishal's rank from the top = 7

Vishal's rank from the bottom = 26

So, Total students will be = 7 + 26 - 1 = 32

Thus, the total number of students in the class is 32.

Hence, the correct answer is option (b).

19. Here total students are 60 where girls are twice of boys means (B = 2B where 2B are girls)

So, total students are

$$B + 2B = 60$$
$$B = 20$$

So, there are 20 boys and 40 girls in the class.

Now, Kamal's rank from the top = 17th

There are 9 girls ahead of Kamal.

So, the total number of students ahead of Kamal is 16 and 9 of these are girls, the remaining 7 students ahead of him must be boys.

The number of boys after Kamal in rank will be:

20 - 7 = 13

Thus, the number of boys after Kamal in rank is 13. Hence, the correct answer is option (c).

20. Here, Given:

Alok's rank from the top = 11 Alok's rank from the bottom = 31 So, the total number of students in the class will be = 11 + 31 - 1 = 41Thus, the total number of students in the class is 41. Hence, the correct answer is option (c).

21. Here, Given Manoj's rank from the top = 16th. Manoj's rank from the bottom = 29th.So, the total number of boys who passed the exam is:

$$16 + 29 - 1 = 44$$

Now, 6 boys did not participate. 5 boys failed.

Therefore, the total number of boys in the class is:

$$44 + 6 + 5 = 55$$

Thus, the total number of boys in the class is 55. Hence, the correct answer is option (d).

22. Here, Anuj's position is 18th from either end of the row. This means that there are 17 boys on the left and 17 boys on the right of him. Now, add the boys on the left, the boy in question (Anuj), and the boys on

the right 17 + 1 + 17 = 35.

Thus, there are 35 boys in the row.

Hence, the correct answer is option (c).

23. Here, according to the question Pooja > Nishu > Riya > Nikita will be pattern and Amrita is the shortest.

Thus, the tallest is Pooja, the second tallest is Nishu, and the rest are shorter.

So, the second tallest is Nishu.

Hence, the correct answer is option (d).

24. Here given,

Sanjay's rank from the last = 16th.

Total students = 49.

So, Sanjay's rank from the top = 49 - 16 + 1 = 34

Sushant's rank is 7 ahead of Sanjay, so = 34 - 7 = 27

and Sushant's rank = 27th, so Sushmita would be 1 rank below Sushant.

Thus, Sushmita's rank would be = 27 + 1 = 28

So, the correct answer for Sushmita's rank is (c) 27th.

25. Here, Given:

Total number of students = 31 Ria's rank from the top = 8th

Esha's rank from the top = 12th

So, Ria's rank from the bottom = 31 - 8 + 1 = 24

and Esha's rank from \hat{A} the \hat{A} bottom = 31 - 12 + 1 = 20

Thus, Ria's rank from the bottom is 24th, and Esha's rank from the bottom is 20th.

Hence, the correct answer is option (c).

$|\mathbf{6} ight angle$ DIRECTION SENSE TEST

1. When moving clockwise or counterclockwise, each direction is transformed into another direction that follows a certain pattern. So, for West:

Following the pattern, West should become South-East.

Hence, the correct answer is option (c).

- 2. The man walks in different directions: 6 km east, 2 km south, 2 km east again, and then 8 km north. If we look at how far he moved east and north, he ends up 10 km away from where he started. Hence, the correct answer is option (a).
- **3.** Suhani starts by facing South-West. When she turns 225° anti-clockwise, she moves from South-West to North-East. Then, she turns 315° clockwise from North-East, which brings her back to South-West. Therefore, after both turns, Suhani is facing South-West.

- **4.** Sunil is 40 meters South-West of Amar, and Pranav is 40 meters South-East of Amar. Since Sunil and Pranav are on opposite diagonals from Amar, Pranav is positioned to the East of Sunil. This is because Pranav is to the South-East of Amar, while Sunil is to the South-West. Therefore, Pranav is in the East direction relative to Sunil. Hence, the correct answer is option (c).
- 5. In the evening, the sun is setting in the west. Since Ria's shadow is falling exactly towards her back, it means the sun's rays are coming from the west, and her back is towards the west. Therefore, Ria must be facing east. Hence, the correct answer is option (a).
- **6.** Priya starts by walking 3 meters south. Then, she takes a left turn and walks 5 meters east. After that, she takes another left turn and walks 3 meters north. Since her movement in the north-south direction cancels out (3 meters south and 3 meters north), her only displacement is 5 meters

to the east. Therefore, Priya is now 5 meters away from her starting point. Hence, the correct answer is option (c).

7. Manoj and Ravi start from the same point. Manoj first moves 3 km north, then turns right (which means he is now facing east) and walks 4 km. Ravi, on the other hand, moves 5 km west, then turns right (which means he is now facing north) and walks 3 km. To find the distance between them, we calculate their positions: Manoj is 3 km north and 4 km east, while Ravi is 3 km north and 5 km west. Using the distance formula, the straight-line distance between them is 9 km.

Hence, the correct answer is option (b).

8. Since he moves 3 km north and then 8 km south, his net movement is:

= 8 km south - 3 km north = 5 km south.

So, at the end of the walk, he is 5 km south from his starting point. Hence, the correct answer is option (d).

9. Simran starts by walking 5 meters south. Then, she takes a right turn, which means she is now facing west, and walks 2 meters. After that, she takes a left turn, which makes her face south again. Therefore, Simran is facing south at the end of her walk.

Hence, the correct answer is option (a).

- 10. Anuj starts by walking 8 km towards the East, then he walks 4 km towards the South. After that, he walks 4 more km towards the East. To find the total distance covered, we add all the distances he walked: 8 km + 4 km + 4 km = 16 km. Therefore, the total distance Anuj covered is 16 km. Hence, the correct answer is option (b).
- 11. Pankaj starts by walking 50 meters towards the East. Then, he takes a right turn and walks 40 meters towards the South. After that, he takes another right turn and walks 50 meters towards the West. Since his movement in the east-west direction cancels out (50 meters east and 50 meters west), he ends up 40 meters south of his starting position. Hence, the correct answer is option (d).
- 12. The ship initially sails towards South-East. The captain then orders a 135° anti-clockwise turn, which changes the ship's direction to North-West. After that, the captain orders a 225° clockwise turn from North-West, which leads the ship to sail towards South-West. Therefore, the ship is now sailing in the South-West direction.

Hence, the correct answer is option (c).

13. The girl was initially going towards the East. She then took a left turn, which made her face North. After that, she turned 90° anti-clockwise, which changed her direction from North to West. Therefore, she is now going West.
14. Kunal starts from his house and walks 10 km towards the East. Then, he turns to his left (which makes him face North) and walks 6 km. After that, he turns to his left again (which makes him face West) and walks 10 km. Since he moved 10 km east and then 10 km west, he ends up at the same east-west position. His only displacement is 6 km north, so Kunal is now 6 km away from his house.

Hence, the correct answer is option (a).

15. Arun begins his journey by walking 6 km in some direction. After that, he turns to his right and walks 2 km, then turns left and walks 10 km. At the end of his walk, he is facing North. To figure out his starting direction, we work backward: before his left turn, he must have been facing West (since a left turn from West leads to North), and before that, he must have been facing South (since a right turn from South leads to West). Therefore, Arun started his journey facing South.

Hence, the correct answer is option (b).

16. Peter initially rode his bicycle northwards for some distance. After that, he turned left, which made him ride 2 km west, and then he took another left turn and rode 3 km south. At the end of his journey, he found himself 2 km west of his starting point. This means that his initial northward ride must have been 3 km, as it accounts for the 2 km westward displacement after his turns.

Hence, the correct answer is option (c).

- 17. Sameer starts at point X and walks 20 meters towards the West. He then turns left and walks 25 meters, which makes him face South. After that, he takes another left turn and walks 20 meters, which makes him face East. Finally, he turns right and walks 18 meters, facing South again. After all these movements, Sameer has moved a total of 43 meters south. Therefore, Sameer is now 43 meters south from his starting point X. Hence, the correct answer is option (c).
- **18.** Naresh starts from his house and walks 8 km towards the East. He then turns to his right, which makes him face South, and walks 6 km. To return to his house, Naresh needs to cover the same horizontal and vertical distances, so he will need to walk 8 km west and 6 km north. Since these movements are perpendicular, the minimum distance he must cover is the straight-line distance, calculated using the Pythagorean theorem, which comes out to be 10 km.

Hence, the correct answer is option (d).

19. Rahul starts by walking 1 km southwards. Then, he takes a left turn, which makes him face East, and walks 6 km. After that, he turns left again, which makes him face North, and walks 5 km. Finally, he takes a right turn, which makes him face East, and walks 5 km. In the end, Rahul has moved a total of 11 km towards the East and 4 km towards the North from his

starting point, meaning he is now in the North-East direction. Hence, the correct answer is option (a).

20. One morning, Ram starts walking towards the Sun, which rises in the East. After covering some distance, he turns left, which makes him face North. Then, he turns right, which makes him face East again. Finally, he takes another left turn, which makes him face North once more. So, after all these turns, Ram is facing North.

Hence, the correct answer is option (c).

- **21.** Shilpi starts by facing South-West. First, she turns 45° clockwise, which makes her face West. Then, she turns 135° anti-clockwise, which changes her direction to South-East. Finally, she turns 45° anti-clockwise, which makes her face East. After all these turns, Shilpi is now facing East. Hence, the correct answer is option (c).
- **22.** Point A is to the West of point B, and point B is to the North of point C. This places point C directly south of point B. Point D lies exactly between points A and C, and A, D, and C are in a straight line. Since point A is to the west of point B, and point C is to the south of point B, point D, being between A and C, will be in the South-West direction relative to point B. Hence, the correct answer is option (b)
- 23. Saurabh starts by walking 75 metres towards the East. Then, he turns left and walks 25 metres, which means he is now heading North. After that, he turns left again and walks 40 metres, heading West. Finally, he turns left once more and walks 25 metres, now heading South. When we calculate his displacement, he ends up 35 metres East of his starting point, with no movement in the North-South direction.

Hence, the correct answer is option (c).

24. Sachin starts facing North and walks 30 metres. He then turns left and walks 50 metres, which makes him face West. After that, he turns left again and walks 30 metres, now facing South. When we calculate his displacement, he ends up 50 metres West of his original position, as his North-South movement cancels out, and he has only moved in the West direction.

Hence, the correct answer is option (a).

25. Vishal starts at point P and walks 40 metres North to reach point Q. If we assume that Vishal then turned to the right or left (east or west), making a right angle, it forms a right-angled triangle. The two legs of the triangle would be the 40 metres North and another 40 metres in the east or west direction. Using the Pythagorean theorem, we calculate the straight-line distance between P and Q to be 50 metres. Since the direction is at a 45° angle from both the north and east directions, Vishal is facing North-East. Hence, the correct answer is option (a).

- 26. Village Q is to the North of village P, meaning Q is directly north of P. Village R is in the East of village Q, so R is located to the east of Q. Village S is to the left of village P, which means S is to the West of P. Now, to find the direction of village S with respect to village R: Village S is to the West of P, and village R is to the East of Q. So, village S will be to the South-West of village R, as village R is to the east and slightly north of village P, and village S is to the left of P. Thus, village S is South-West of village R. Hence, the correct answer is option (b).
- **27.** Sunil starts from his house and first walks 15 km North. He then turns West and covers 10 km, followed by a South turn where he walks 5 km. Finally, he turns East and walks another 10 km. In terms of direction, his movements in the East-West direction cancel each other out, as he goes 10 km west and 10 km east, leaving no displacement. However, in the North-South direction, Sunil ends up 10 km North from his starting point, since he went 15 km north and only 5 km south. Therefore, Sunil is North of his house.

Hence, the correct answer is option (c).

28. She moved 10 feet East and then 14 feet West, so her net movement in this direction is 4 feet West. In the North-South direction, she only moved 3 feet South.

So, Ruchi is 5 feet away from point A.

Hence, the correct answer is option (b).

- **29.** Peter is facing north because in the morning, the sun is in the east. The shadow of the pole falls to his right, which means it is pointing west. This matches the situation where he faces north. None of the option is matching
- **30.** To determine the direction of D's house relative to A's house, let's analyze the positions. First, B's house is to the east of A's house, meaning A is to the west of B. Then, B's house is to the north of C's house, which places C's house to the south of B. Additionally, C's house is to the west of D's house, meaning D's house is to the east of C's house. Since C is south of A, D's house ends up being to the southeast of A's house. Therefore, D's house is in the south-east direction relative to A's house.

Hence, the correct answer is option (a).

31. X starts walking south. So, initially, X is facing south.

After walking 5 meters, X turns left, which means he is now facing east and walks 3 meters in that direction.

Then, X turns right, which makes him face south again and walks 5 meters.

At the end of these movements, X is still facing south.

Hence, the correct answer is option (b).

32. The boy starts by riding his bicycle northward for a certain distance. After some time, he turns left and rides 1 km west. Then, he turns left again and rides 2 km south. At the end of these movements, he finds himself 1 km west of his starting point. This indicates that the 1 km westward shift is the key factor in figuring out how far he initially rode north. Since he rode 2 km south, the 2 km north he originally traveled must balance out with the southward movement, leaving him 1 km west of his starting point. Therefore, the boy must have initially ridden 2 km northward Hence, the correct answer is option (c).

7 BLOOD RELATIONSHIP

1. Relations may be analysed as:

According to Ravi, Sita's father is the father of Ravi's father.

This means Sita's father is Ravi's grandfather.

If Sita's father is Ravi's grandfather, then Sita is Ravi's aunt (father's sister), and Ravi is Sita's nephew.



Hence, the correct answer is option (b).

2. A says C is his father's nephew:

This means C is the son of A's uncle or aunt. So, C is A's cousin.

D is A's cousin but not the brother or sister of C.

D is also A's cousin, but D is not C's brother or sister. This means D and C are cousins of A but come from different parents (different uncles or aunts).

Relationship between D and C:

Since D and C are both cousins of A but not siblings, they are cousins to each other.

Hence, the correct answer is option (b).

- B is the husband of C and A is the sister of B and D is the sister of C.
 D is C's sister, so D is B's sister-in-law.
 Hence, the correct answer is option (d).
- 4. In this question,

The son of the father of my wife's Daughter means his own son. Hence, the correct answer is option (b).





5. Here, harsh looking one portrait of a man and saying, His mother is the wife of my father's son This means the mother of the man in the portrait is Harsh's wife. Therefore, the man in the portrait is the son of Harsh and his wife. Hence, the correct answer is option (a).

6. Here, Rahul's mother is the only daughter of Monika's father this means Monika is the Rahul's mother and monika's husband will be Rahul's Father.

Hence, the correct answer is option (b).

7. Here, Deepak is brother of Ravi and Ravi is son of Rekha and Rekha is sister of Atul. When Deepak and Ravi are brothers and Ravi is son of Rekha then Deepak is also son of Rekha.

Hence, the correct answer is option (d).

8. Here, C has father A and D is son of B where given C and D are siblings. Here C is sister of D and A having one Brother called E, A will be husband of B.

Hence, the correct answer is option (a).

9. Here given Relations are: Suresh and Sachin are brothers, where given Sachin is son of Tina means Suresh is also son of Tina because Suresh and Sachin are siblings. Hence, the correct answer is option (a).

10. Here given relations are:

A and B are husband, wife where A is the father of C (means A, B both having one child C) and C also having one Daughter called E, then B will be grandmother of E.

Hence, the correct answer is option (c).

11.



In this tree total females are 14.

Hence, the correct answer is option (a).

12. Here, Radhika is pointing a photograph and saying his father's daughter is my sister means she taking about her own sister, so the man in the photograph is her sibling.







So Radhika is sister of that man. Hence, the correct answer is option (b).

13. Here relations are given:

A is sister of B and B is brother of C means A, B and C are siblings, C is having one child called D, then A will be aunt of D. Hence, the correct answer is option (d).

- Here relations are given: Seema is daughter of Radhika, Radhika have brother called Mohan and his wife Kirti. Now kirti is aunt of Seema. Hence, the correct answer is option (b).
- **15.** Here, relations are given:

Ram and my father are real brothers and Jhanvi is my grandmother it means Janvi is mother of my father and his brother.

So, Ram is son of Janvi.

Hence, the correct answer is option (d).

16. Here relations are given:

P and Q are sisters and P's daughter is A's sister where A and B are brothers this means P's daughter, A and B are siblings S. So, Q is Aunt of B.

Hence, the correct answer is option (a).

17. Here relations are given:

A woman introduces a man as the son of the brother of her mother this means that man his cousin when the man is her mother's brother son. Hence, the correct answer is option (c).

18. Here relations are given:

Jatin and Rahul are brother and their father is Yash And her father's sister is Suman that is their aunt.

So, Suman will be Rahul's Aunt.

Hence, the correct answer is option (b).

19. Here relations are given:

Man is saying to lady that your mother's husband's sister is my aunt means lady and man are sister brother.

So, lady is sister of that man.

Hence, the correct answer is option (d)

- 20. Here the relations are given:X is the brother of the son of Y's son means X is grandson of Y. Hence, the correct answer is option (d).
- **21.** Here the relations are given: Aman is the son of the only brother of his father's wife means, Aman is Ajit's uncle son.

So, Aman is cousin of Ajit. Hence, the correct answer is option (d).

22. Here relations are given:

Rahul's mother is only daughter of Monika's father means Monika is mother of Rahul and husband of Monika's is Rahul's Father. Hence, the correct answer is option (b).

23. Here relations are given:

A and B are married couple and X and Y are also brother and X is also brother of A, So X, Y and A are siblings.

So, B is brother-in-low of Y.

Hence, the correct answer is option (b).

- 24. Here relations are given: Neetu says, "His daughter's mother (means Vishal's wife) is the only daughter of my father's wife" means she is the only child of her parents. So, Neetu is Vishal's wife. Hence, the correct answer is option (c).
- 25. Here relations are given:P is the father of Q and Q having sons R, S and T is mother of S means T is wife of Q.So, T is Daughter-in-law of P.Hence, the correct answer is option (c).



8 AGE PUZZLES

1. Let's assume Rohit's age is R years and Mohit's age is M years. Rohit is younger than Mohit by 7 years: M = R + 7

and the given ratio of their age is $\frac{R}{M} = \frac{7}{9}$

...(i)

Now put the value of M in equation (i)

$$\frac{R}{R+7} = \frac{7}{9}$$
$$9R = 7(R+7)$$
$$9R = 7R + 49$$

Now, subtract 7R from both sides

$$2R = 49$$
$$R = \frac{49}{2} = 24.5$$

So, Rohit's age is 24.5 years.

Hence, the correct answer is option (a).

2. Let the son's current age be *x* years.

The man's current age is x + 24 years.

In two years Son's age will be x + 2 and man's age will be

(x + 24) + 2 = x + 26.

In two years, the man's age will be twice the son's age means

$$x + 26 = 2(x + 2)$$

x + 26 = 2x + 4
26 = x + 4

Subtract 4 from both sides then *x* will be

x = 22

The son's current age is 22 years. Hence, the correct answer is option (c).

3. The ratio of Mukesh's age to Aadesh's age is 4 : 3.

Mukesh will be 26 years old in 6 years, so Mukesh's current age is 26 - 6 = 20 years.

Now ratio of Mukesh and Adesh age is $\frac{4}{2}$.

then, We know Mukesh's age is 20, so equation will be

$$\frac{A}{20} = \frac{4}{3}$$
$$20 \times 3 = 4 \times A$$
$$60 = 4A$$
$$A = \frac{60}{4} = 15$$

Aadesh's current age is 15 years.

Hence, the correct answer is option (b).

4. Let assume person's current age is P, and father's current age is F.

Given, $P = \frac{2}{5} F$ After 8 years $P + 8 = \frac{1}{2} (F + 8)$...(i) We know $P = \frac{2}{5} F$ Substitute value of P in eq. (i) $\frac{2}{5}F + 8 = \frac{1}{2} (F + 8)$ By Simplifying, 4F + 80 = 5(F + 8)4F + 80 = 5F + 40

$$80 = F + 40$$
$$F = 40$$

Hence, the correct answer is option (b).

5. Let B's present age be B. Let C's present age be C.

Ten years ago, B was half of C's age $B-10 = \frac{1}{2}(C-10)$...(i)

and the current ratio of their ages is 3 : 4, $\frac{B}{C} = \frac{3}{4}$

$$B = \frac{3}{4}C$$

Now put B's value in eq. (i)

$$\left(\frac{3}{4}C\right) - 10 = \frac{1}{2}(C - 10)$$

3C - 40 = 2(C - 10)
3C - 40 = 2C - 20
C - 40 = - 20
C = 20

Now that we know that C= 20 we can find B value

$$B = \frac{3}{4} \times 20 = 15$$

Now, The total of their present ages is: B + C = 20 + 15 = 35Hence, the correct answer is option (c).

6. Let A's present age be 3x.

Let B's present age be 2x. 10 years from now, A's age will be 3x+10. B's age will be 2x + 10Given, (3x + 10) + (2x + 10) - 80

$$3x + 10) + (2x + 10) = 80$$

$$3x + 10 + 2x + 10 = 80$$

$$5x + 20 = 80$$

$$5x = 60$$

$$x = 12$$

Now that we know x = 12, we can find their present ages.

As present age is
$$3x = 3 \times 12 = 36$$

B's present age is $2x = 2 \times 12 = 24$

A's present age is 36 years, and B's present age is 24 years.

Hence, the correct answer is option (b).

7. Let the man's present age be 5x.

Let the wife's present age be 8*x*.

and the ratio of their ages after 10 years is 2 : 3.

$$5x + \frac{10}{8x} + 10 = \frac{2}{3}$$
$$3(5x + 10) = 2(8x + 10)$$
$$15x + 30 = 16x + 20$$
$$30 = x + 20$$
$$x = 10$$

Now that we know x = 10, we can find their present ages The man's present age is 50 yr. The wife's present age is 80 yr. After 20 years: The man's age will be 50 + 20 = 70 years. The wife's age will be 80 + 20 = 100 years. The ratio of their ages after 20 years will be: $\frac{70}{100} = \frac{7}{10}$

100

So, The ratio of their ages after 20 years is 7 : 10. Hence, the correct answer is option (d).

8. Let Manish's current age be M = 20 years.

Let Gaurav's current age be G Given M = 5G

We know that	M = 20
	20 = 5G
	G = 4yr

and the age difference between Manish and Gaurav is 20 - 4 = 16 yr Manish will be three times as old as Gaurav:

$$20 + x = 3(4 + x)$$

$$20 + x = 12 + 3x$$

$$20 = 12 + 2x$$

$$8 = 2x$$

$$x = 4 \text{ year}$$

Manish's age will be:

20 + 4 = 24 years

Hence, the correct answer is option (c).

9. Let the present age of the man be *x* years. 15 years from now his age will be will be x + 15. and 15 years ago was x - 15. In 15 years, his age will be 4 times what it was 15 years ago x + 15 = 4(x - 15) x + 15 = 4x - 60 15 = 3x - 60 75 = 3xx = 25

The man's present age is 25 years. Hence, the correct answer is option (d).

10. Let Anita's father's age be F.

Let Anita's mother's age be M.

Let Anita's age be A.

Let Anita's brother's age be B.

Anita's father was 38 years old when Anita was born: F = A + 38

Anita's mother was 36 years old when her brother was born M = B + 36

Anita's brother is 4 years younger than Anita B = A - 4

Now, substitute B = A - 4 into M = B + 36:

$$M = (A - 4) + 36 = A + 32$$

Now that we know:

$$F = A + 38$$
 (father's age)
 $M = A + 32$ (mother's age)

The difference between their ages is

$$F - M = (A + 38) - (A + 32)$$
$$= 38 - 32 = 6$$

Hence, the correct answer is option (b).

11. Let Rahul's current age be R.

Let his wife's current age be W

After 7 years, the ratio of their ages will be 7 : 6.

Rahul's wife was born 23 years ago, so her current age is: W = 23. After 7 years will be 7 : 6, so

$$\frac{R+7}{W+7} = \frac{7}{6}$$
$$\frac{R+7}{30} = \frac{7}{6}$$
$$6(R+7) = 7 \times 30$$
$$6R + 42 = 210$$
$$6R = 168$$
$$R = 28$$

After 2 years, his age will be :

$$28 + 2 = 30$$

Rahul's age after 2 years will be 30 years. Hence, the correct answer is option (b). **12.** After 5 years, the ratio of ages of A and B is 5 : 8.

$$\frac{A+5}{B+5} = \frac{5}{8}$$

$$8(A+5) = 5(B+5) \qquad ...(i)$$
After 8 years, the sum of their ages is 71:

$$A + B + 16 = 71$$

$$A + B = 55$$
From

$$A + B = 55$$

 $A = 55 - B$...(ii)

Putting, (i), we get

$$8(55 - B) = 5(B + 5)$$

 $440 - 8B = 5B + 25$
 $440 - 25 = 13B$
 $B = 35$

Hence, the correct answer is option (c).

13. A's age was x - 4 years. B's age was (x + 8) - 4 = x + 4 years. Their ages were in the ratio 1 : 2.

$$\frac{x-4}{x+4} = \frac{1}{2}$$

$$2(x-4) = 1(x+4)$$

$$2x-8 = x+4$$

$$x-8 = 4$$

$$x = 12$$

So, the present age of A is 12 years. Therefore, the present age of B is :

$$x + 8 = 12 + 8 = 20$$

Thus, the present age of B is 20 years.

Hence, the correct answer is option (d).

14. Given, The ratio of the ages of A, B and C, 5 years ago,

$$a - 5: b - 5: c - 5 = 4:5:7$$

Let the constant of proportionality be k. Therefore, we have:

$$a - 5 = 4k, b - 5 = 5k, c - 5 = 7k$$

 \Rightarrow a = 4k + 5, b = 5k + 5, c = 7k + 5 ...(i)

We are also told that the sum of their present ages is 135 years:

$$a + b + c = 135$$

Substitute the expressions for *a*, *b*, and *c*

$$(4k + 5) + (5k + 5) + (7k + 5) = 135$$

 $4k + 5 + 5k + 5 + 7k + 5 = 135$
 $16k + 15 = 135$

16k = 120k = 7.5

Now, substitute

k = 7.5 back into the expressions for *a*, *b*, and *c*: in eq. (i) a = 4(7.5) + 5 = 30 + 5 = 35 b = 5(7.5) + 5 = 37.5 + 5 = 42.5 c = 7(7.5) + 5 = 52.5 + 5 = 57.5In 3 years, their ages will be: b + 3 = 42.5 + 3 = 45.5 c + 3 = 57.5 + 3 = 60.5The ages of B and C, 3 years from now, is 106 years. Hence, the correct answer is option (c).

15. Given that the ratio of the present ages of Rohit to Mohit is 2 : 3. Let their present ages be 2*x* for Rohit and 3*x* for Mohit. In 8 years Rohit will be 20 years old

$$2x + 8 = 20$$
$$2x = 20 - 8$$
$$2x = 12$$
$$x = 6$$

Present age

 $3x = 3 \times 6 = 18$

Thus, the present age of Mohit is 18 years. Hence, the correct answer is option (a).

16. Let the age of the youngest child be *x*.

The children are born at intervals of 3 years, so their ages will be: Youngest child: x Second youngest child: x + 3Third child: x + 6Fourth child: x + 9Fifth child: x + 12The sum of their ages is 50 years. So, x + (x + 3) + (x + 6) + (x + 9) + (x + 12) = 505x + (3 + 6 + 9 + 12) = 505x + 30 = 50

5x = 20x = 4

Thus, the age of the youngest child is 4 years. Hence, the correct answer is option (a).

17. Let the present age of the son be *x*.The man's present age is *x* + 24.In two years the man's age will be twice the son's age

x + 26 = 2(x + 2)x + 26 = 2x + 4 26 = x + 4 x = 22

Thus, the present age of the son is 22 years. Hence, the correct answer is option (d).

18. Let Sachin's age be 7*x* and Rahul's age be 9*x*.We are told that Sachin is 7 years younger than Rahul,

So

$$9x - 7x = 7$$
$$2x = 7$$
$$x = 3.5$$

Now, Sachin's age is:

 $7x = 7 \times 3.5 = 24.5$

Thus, Sachin is 24.5 years old.

Hence, the correct answer is option (c).

19. Q is as much younger than R as he is older than T. This means:

$$r - q = q - t$$

We also know r + t = 50From r - q = q - t, we can express r as r = 2q - t. Substituting this into r + t = 50, we get: (2q - t) + t = 50

$$2q = 50 = 25$$

Now, the difference between R and Q's age is always 25 years. Hence, the correct answer is option (c).

20. Meena's father is 38 years older than her, and her mother is 36 years older than her brother. Since her brother is 4 years younger than Meena, the father's age is 2 years more than the mother's. Thus, the difference between her parents' ages is 2 years.

Hence, the correct answer is option (a).

21. Let the present ages of Shalu and Ria be 8*x* and 7*x* respectively. After 10 years

$$\frac{8x+10}{7x+10} = \frac{8}{7}$$

$$12(8x+10) = 13(7x+10)$$

$$96x+120 = 91x+130$$

$$96x-91x = 130-120$$

$$5x = 10$$

$$x = 2$$

the present ages of Shalu and Ria are: Shalu's age = $8x = 8 \times 2 = 16$ Its's age $= 7x = 7 \times 2 = 14$ The difference in their ages is 16 - 14 = 2 years. Hence, the correct answer is option (a).

22. Let the present age of the son be *x*.

The present age of the man be *y* years.

10 years ago: y - 10 = 7(x - 10) y - 10 = 7x - 70y = 7x - 60

2 years hence, twice the man's age will be equal to five times the son's age):

$$2(y + 2) = 5(x + 2)$$

$$2y + 4 = 5x + 10$$

$$2y = 5x + 6$$

Now, substitute y in eq. (i)

$$2(7x - 60) = 5x + 6$$

$$14x - 120 = 5x + 6$$

$$14x - 5x = 120 + 6$$

$$9x = 126$$

$$x = 14$$

Thus, the present age of the son is 14 years. Hence, the correct answer is option (c).

23. Lets assume the daughter's current age as *x* and the mother's current age as *y*.

The sum of their ages is 56.

$$x + y = 56$$
Solve for y:

$$y = 56 - x$$
After 4 years

$$y + 4 = 3(x + 4)$$
Substitute Y's value in eq. (i)

$$56 - x + 4 = 3(x + 4)$$

$$60 - x = 3x + 12$$

$$60 - 12 = 3x + x$$

$$48 = 4x$$

$$x = 12$$
We know x =12, substitute it into the equation y = 56 - x:

$$y = 56 - 12 = 44$$
Hence, the correct answer is option (b).
Let the present age of the man be m and the present age of his son be s.
Given, 18 years ago, the man was three times as old as his son

$$m - 18 = 3(s - 18)$$
...(i)
Now, the man is twice as old as his son $m = 2s$

Substitute m = 2s into the first equation

24.

2s - 18 = 3(s - 18)

2s - 18 = 3s - 5418 + 54 = 3s - 2s36 = sNow s=36, substitute it into m = 2s: m = 2(36) = 72The sum of their present ages is m + s = 72 + 36 = 108Hence, the correct answer is option (d). 25. Let the present ages of X, Y, and Z be represented by x, y, and z, respectively. Given, x - 3 = 3yz = 2yz = x - 12From equation (2), z = 2y, and from equation (3), z = x - 12. So, we can equate these two expressions for *z* : 2y = x - 12and x = 2y + 12Substitute x = 2y + 12 into the first equation x - 3 = 3y: (2y + 12) - 3 = 3y2y + 9 = 3yv = 9Now that we know y = 9, substitute it into z = 2y: z = 2(9) = 18Hence, the correct answer is option (d). **26.** Let the present ages of the three persons be *x*, *y* and *z*. Given x + y + z = 72Seven years ago, their ages were in the ratio 4:6:7(x-7):(y-7):(z-7)=4:6:7We can write: $\frac{(x-7)}{4} = \frac{(y-7)}{6} = \frac{(z-7)}{7} = k$ For *x*, *y* and *z*: $x - 7 = 4k \Longrightarrow x = 4k + 7$ $y - 7 = 6k \Longrightarrow y = 6k + 7$

Now, substitute x = 4k + 7, y = 6k + 7, and z = 7k + 7 into the sum of their present ages equation x + y + z = 72:

$$(4k+7) + (6k+7) + (7k+7) = 72$$

 $z - 7 = 7k \Longrightarrow z = 7k + 7$

$$4k + 6k + 7k + 7 + 7 + 7 = 72$$

$$17k + 21 = 72$$

$$17k = 72 - 21$$

$$17k = 51$$

$$k = 3$$

We know

= 3 k = 3, substitute it into the expressions for *x*, *y* and *z*. x = 4k + 7 = 4(3) + 7 = 12 + 7 = 19 y = 6k + 7 = 6(3) + 7 = 18 + 7 = 25 z = 7k + 7 = 7(3) + 7 = 21 + 7 = 28So the correct answer is (c) 19, 25, 28.

Hence, the correct answer is (c) 19, 25, 28.

27. Given

$$a = 3b$$

$$c - 4 = 2(a - 4)$$

$$a + 4 = 31$$

A's present age a = 31 - 4 = 27

a = 3b, and since we now know a = 27, we can solve for b

$$27 = 3b$$
$$b = 9$$

C's present age

$$c - 4 = 2(a - 4)$$
, substitute $a = 27$:
 $c - 4 = 2(27 - 4)$
 $c - 4 = 2(23)$
 $c - 4 = 46$
 $c = 46 + 4 = 50$

The present ages of B and C are 9 years and 50 years, respectively. So the correct answer is (d) 9, 46.

28. Let the present age of Manish be M = 20 and age of Girish be G Given,

Put M= 20

G = 4

When Manish will be three times as old as Girish. Let the number of years from now be *x*.

In *x* years Manish will be three times as old as Girish:

$$20 + x = 3(4 + x)$$

$$20 + x = 12 + 3x$$

$$20 - 12 = 3x - x$$
$$8 = 2x$$
$$x = 4$$

In 4 years, Manish will be 20 + 4 = 24 years. Hence, the correct answer is option (c).

29. Let the present age of the son Ronit be R years and the present age of the father be F years.

Given

F = 3R ...(i) and F + 8 = 2.5(R + 8) ...(ii)Substitute F = 3R into the second equation 3R + 8 = 2.5(R + 8)3R + 8 = 2.5R + 203R - 2.5R = 20 - 8

Father's present age

$$F = 3(24) = 72$$

After 16 years, the son's age will be

R + 16 = 24 + 16 = 40

The father's age will be:

$$F + 16 = 72 + 16 = 88$$

After 16 years, the father's age will be: $\frac{88}{40} = 2\frac{1}{5}$

After a further 8 years, the father will be $2\frac{1}{5}$ times as old as Ronit

Hence, the correct answer is option (b).

30. Let the son's age be S , daughter's age be D, father's age be F and mother's age will be M. Given,

$$F = 4S \qquad \dots (i)$$

$$D = \frac{1}{3}M$$
...(ii)

$$M = F - 6$$
 ...(iii)

Relationship between the mother's and father's ages From equation (3), M = F - 6, and from equation (1), F = 4S, substitute F = 4S into M = F - 6: M = 4S - 6Relationship between the daughter's and mother's ages

$$D = \frac{1}{3}(4S - 6)$$

Relationship between the son's and daughter's ages

$$S + 3 = (4S - 6)/3$$

$$3(S + 3) = 4S - 6$$

$$3S + 9 = 4S - 6$$

$$9 + 6 = 4S - 3S$$

$$15 = S$$

Now, mother's age

$$M = 4(15) - 6 = 60 - 6 = 54$$

Hence, the correct answer is option (c).

31. Let's assume man age be M and the present age of his son be S. Given

From first equation,

$$\begin{split} M &-10 = 3(S-10) \\ M &-10 = 3S-30 \\ M &= 3S-20 \\ &\dots (iii) \end{split}$$

From second equation,

$$M + 10 = 2(S + 10),$$

$$M + 10 = 2S + 20$$

$$M = 2S + 10$$
(iv)
In for M from Equation (iii) into Equation (iv)

Substitute the expression for M from Equation (iii) into Equation (iv)

$$3S - 20 = 2S + 10$$

 $3S - 2S = 10 + 20$
 $S = 30$

Now,man's age

M = 2(30) + 10 = 60 + 10 = 70The ratio of their present ages is M/S $\frac{70}{30} = \frac{7}{3}$

Hence, the correct answer is option (b).

32. Let the present age of the son be S and the present age of the mother be M. Given

$$S = \frac{M}{2}$$
 ...(i)
M - 10 = 3(S - 10) ...(ii)

Substitute M/2 into second equation

$$M - 10 = 3\left(\frac{M}{2} - 10\right)$$
$$M - 10 = \frac{3M}{2} - 30$$

$$\begin{array}{l} 2(M-10) = 3M-60\\ 2M-20 = 3M-60\\ -20+60 = 3M-2M\\ M=40 \end{array}$$

Son's age

$$S = \frac{M}{2}$$
$$S = 20$$

Hence, the correct answer is option (a).

33. Let assume Ram's father's age = F Ram's age = R Ram's wife's age = W Ram's son's age = S Given, $S = \frac{1}{3}W, W = \frac{4}{5}R, R = \frac{3}{5}F, F = 50 \text{ yr}$ Ram's age $= \frac{3}{5} \times 50 = 30$ Ram's wife's age $= \frac{4}{5} \times 30 = 24$ Ram's son's age $= \frac{1}{3} \times 24 = 8$ Hence, the correct answer is option (b).

34. Let the present age of the father be F and the present age of the son be S. Given,

$$F - 10 = 3(S - 10)$$

$$F + 10 = 2(S + 10)$$

$$F - 10 = 3(S - 10)$$

$$F - 10 = 3(S - 10)$$

$$F - 10 = 3S - 30$$

$$F = 3S - 20$$
and
$$F + 10 = 2(S + 10)$$

$$F + 10 = 2S + 20$$

$$F = 2S + 10$$
Substitute of value in equation (i)

$$3S - 20 = 2S + 10$$

$$3S - 2S = 10 + 20$$

$$S = 30$$
Father's age
$$F = 2S + 10 = 2(30) + 10$$

$$= 60 + 10 = 70$$

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Ratio of their present ages $= \frac{F}{S} = \frac{70}{30} = \frac{7}{3}$

Hence, the correct answer is option (b).

35. Let Farah's present age be F and her daughter's present age be D.

Given $F = 1.7 \times (Farah's age 8 years ago)$

 $F = 1.7 \times (F - 8)$ D = 1/6 F $F = 1.7 \times (F - 8)$ F = 1.7F - 13.6 F - 1.7 F = -13.6F = 19.43 (approximately 19 years)

Daughter's present age

$$D = \frac{1}{6}F = \frac{1}{6} \times 19.43 = 3.24$$

Since we have a very small value for her daughter's age 3 years ago, we can say it is approximately 0 years

Hence, the correct answer is option (d).

g MATHEMATICAL OPERATIONS

1. Change of symbol according to the question $12 + 2 \times 9 \div 4$;

```
+ means \div

\div means –

\times means +

12 \div 2 + 9 - 4 = 6 + 9 - 4

= 15 - 4 = 11

Simplify the above expression using BODMAS rule.
```

Thus, the final result is 11.

Hence, the correct answer is option (c).

2. Change of symbol according to the question $15 \times 3 \div 15 + 5 - 2$.

```
+ means -

- means ×

× means ÷

÷ means +

15 \div 3 + 15 - 5 \times 2 = 5 + 15 - 10

= 20 - 10

= 10
```

Simplify the above expression using BODMAS rule.

Thus, the final result is 10.

Hence, the correct answer is option (b).

3. Change of symbol according to the question $5 + 12 \div 7 - 44 \times 2$:

```
+ means ×

÷ means –

× means ÷

– means +

5 × 12 – 7 + 44 ÷ 2

Simplify the above expression using BODMAS rule.
```

Thus, the final result is 75.

Hence, the correct answer is option (b).

- **4.** Change of symbol according to the question 18 C 14 A 6 B 16 D 4. Where
 - A stands for 'plus' (+) B stands for 'minus' (-) C stands for 'multiplied by' (×) D stands for 'divided by' (÷)

 $18 \times 14 + 6 - 16 \div 4.$

Simplify the above expression using BODMAS rule.

Thus, the final result is 254.

Hence, the correct answer is option (a).

- 5. Change of symbol according to the question $350 50 \div 10 + 40 \times 6 + 20$. Where,
 - + denotes multiplication (×)
 - \times denotes subtraction (-)
 - ÷ denotes addition (+)
 - denotes division (÷)

 $350 \div 50 + 10 \times 40 - 6 \times 20 = 7 + 400 - 120 = 287$

Hence, the correct answer is option (b).

- 6. Here, Given
 - 2 * 3 = 8 3 * 2 = 9 5 * 1 = 5
 - Similarly,
 - 4 * 3 = 64

Hence, the correct answer is option (a).

7. Given values,

P = 8, Q = 5, R = 14 and S = 7 We need to calculate $P \times Q + R \div S$.

Now, add the results from the two calculations:

40 + 2 = 42Thus, the answer is 42 Hence, the correct answer is option (c). 8. Here Given values, 6 * 5 = 317 * 8 = 573 * 4 = 13 The pattern is $6 \times 5 + 1 = 31$ $7 \times 8 + 1 = 57$ $3 \times 4 + 1 = 13$ Similarly, $9 \times 10 + 1 = 91$ Hence, the correct answer is option (d). **9.** Here, The expression to solve is: 16 U 12 S 4 T 9 V 3 Given, S denotes division (÷) T denotes multiplication (×) U denotes addition (+) V denotes subtraction (-) Now put values, $16 + 12 \div 4 \times 9 - 3 = 40$ Using BODMAS rule $= 16 + 3 \times 9 - 3$ = 16 + 27 - 3= 43 - 3 = 40Hence, the correct answer is option (c). **10.** Here given values, C denotes addition (+) D denotes subtraction (-) E denotes multiplication (\times) F denotes division (÷) The expression to solve is: 16 E 18 F 4 C 36 D 25 Put values $= 16 \times 18 \div 4 + 36 - 25$ Applying BODMAS rule $= 16 \times 18 \div 4 + 36 - 25 = 83$ Hence, the correct answer is option (c).

11. Here, A denotes addition (+) B denotes multiplication (\times) C denotes subtraction (-) D denotes division (÷) The equation to solve is: (46 D 23) A 17 C 13 Applying BODMAS $=(46 \div 23) + 17 - 13$ = 2 + 17 - 13 = 6Hence, the correct answer is option (b). 12. Here, A denotes addition (+) B denotes multiplication (×) C denotes subtraction (-) D denotes division (÷) The equation to solve is: 6 A (9 D 3) C 4 Applying BODMAS rule, $6 + (9 \div 3) - 4$ 6 + 3 - 4 = 5Hence, the correct answer is option (b). 13. Here, S means "add to" (+) P means "multiply by" (\times) Y means "subtract from" (-) M means "divide by" (÷) The expression is: 26 M 2 S 3 P 6 Y 4 Put Symbols, $26 \div 2 + 3 \times 6 - 4$ = 13 + 18 - 4 = 27Hence, the correct answer is option (b). 14. Here given, $15 - 24 + 63 \div 7 \times 2 = 9$ Applying BODMAS rules, $63 \div 7 = 9$ So, the equation becomes: $15 - 24 + 9 \times 2 = 9$ $9 \times 2 = 18$

Now the equation becomes:

15 - 24 + 18 = 915 - 24 = -9

Now the equation becomes:

- 9 + 18 = 9 - 9 + 18 = 9 (which is correct!)

Hence, the correct answer is option (d).

15. The given equation is:

 $12 \times 4 - 8 + 9 \div 3 = 32$

Applying BODMAS

 $12 \times 4 = 48$

Now the equation becomes:

 $48 - 8 + 9 \div 3 = 32$ $9 \div 3 = 3$

Now the equation becomes:

$$48 - 8 + 3 = 32$$

 $48 - 8 = 40$

Now the equation becomes:

40 + 3 = 32

40 + 3 = 43 (which is not equal to 32).

If we swap 12 and 9, the equation becomes:

$$9 \times 4 - 8 + 12 \div 3 = 32$$

 $9 \times 4 = 36$

The equation becomes:

 $36 - 8 + 12 \div 3 = 32$ $12 \div 3 = 4$

The equation becomes: $12 \div 5 = 7$

$$36 - 8 + 4 = 32$$

 $36 - 8 = 28$

The equation becomes:

28 + 4 = 32

28 + 4 = 32 (which is correct!)

Hence, the correct answer is option (c).

16. Here,

The given equation is:

 $9 \times 4 + 6 \div 3 - 5 = 39$ Applying BODMAS rule, $9 \times 4 + 2 - 5 = 39$ 36 + 2 - 5 = 3938 - 5 = 3933 = 39 which is not correct.

So, Swap "-" and "+" The equation becomes: $9 \times 4 - 6 \div 3 + 5 = 39$ then by solving this 39 = 39Hence, the correct answer is option (a). 17. Here, given A denotes addition (+) B denotes multiplication (\times) C denotes subtraction (-) D denotes division (÷) The equation to solve is: 7 A (18 D 3) C 5 $7 + (18 \div 3) - 5$ By applying BODMAS 7 + 6 - 5 = 8Hence, the correct answer is option (d). 18. Here, M denotes addition (+) N denotes subtraction (-) O denotes multiplication (×) P denotes division (÷) The expression to solve is: 125 P 25 N 36 P 18 M 35 Putting values, $125 \div 25 - 36 \div 18 + 35$ By applying BODMAS 5 - 2 + 35 = 38Hence, the correct answer is option (a). **19.** The given equation is: $13 - 25 = 5 + 4 \div 12$ Here, Swap "+" and "=" The equation becomes: $13 - 25 = 5 + 4 \div 12$ 20. The given equation is: $12 \times 4 - 8 + 9 \div 3 = 32$ Applying BODMAS $12 \times 4 - 8 + 3 = 32$ 48 - 5 = 3243 = 32 (not matching)

Option (c): Swap 12 and 9 This would make the equation: $9 \times 4 - 8 + 12 \div 3 = 32$ Let's solve it: $9 \times 4 - 8 + 4 = 32$ 36 - 4 = 3232 = 32Which is correct. Hence, the correct answer is option (c). **21.** The given equation is: $8 \div 2 \times 7 - 5 + 2 = 1$ Here by option (d): Swap + and =The equation becomes: $8 \div 2 \times 7 - 5 = 2 + 1$ Apply BODMAS 4 * 7 - 5 = 2 + 128 - 5 = 2 + 123 = 2 + 1 (not matching) Swap \times and + the eq. become $8 \div 2 + 7 - 5 \times 2 = 1$ 4 + 7 - 10 = 111 - 10 = 11 = 1Hence, the correct answer is option (c). **22.** Here, the given equation is: $7 \times 3 - 98 \div 14 + 5 = 31$ Option (d): Swap 5 and 3 This would make the equation: $7 \times 5 - 98 \div 14 + 3 = 31$ $7 \times 5 - 7 + 3 = 31$ 35 - 4 = 3131 = 31So, the correct answer is (d) 5 and 3. Hence, the correct answer is option (d). 23. Here, the given equation is: $50 \times 5 \div 4 + 4 = 44$ Option (a): Swap \div and \times This would make the equation: $50 \div 5 \times 4 + 4 = 44$

Apply BODMAS

 $10 \times 4 + 4 = 44$ 40 + 4 = 44

Hence, the correct answer is option (a).

- 24. Here given
 - '+' means 'minus'
 - '-' means 'multiply',
 - '÷' means 'plus
 - '×' means 'divide',

The given expression is:

$$10 \times 5 \div 3 - 2 + 3$$

Substitute the new meanings of the operators.

The expression becomes:

$$10 \div 5 + 3 \times 2 - 3 2 + 6 - 3 = 5$$

Hence, the correct answer is option (a).

- 25. Here given
 - A means '+' B means '-
 - C means '×'
 - D means '÷'

The given expression is:

```
18 C 14 A 6 B 16 D 4
```

Substituting the new meanings of the operators, the equation becomes:

 $18\times14+6-16\div4$

Apply BODMMAS

$$18 \times 14 + 6 - 4$$

 $18 \times 14 + 2 = 254$

Hence, the correct answer is option (a).

$\langle 10 angle$ VENN DIAGRAMS

- 1. Professor, Researcher, Scientist Prof Many Professor are researcher and scientists also. Hence, the correct answer is option (c).
- Travellers, Train, Bus As Travellers can use Bus or Train both to travel. Hence the correct answer is option (d).



- **3.** Males, Cousins, Nephew All nephew are considered male, while some cousins can be male, not all cousins have to be male. Hence the correct answer is option (b).
- 4. Criminal, Court, Judgement Criminal is involved in a court and court makes a judgement. Hence the correct option is (a).
- 5. Vegetable, Fruit, Brinjal Vegetable and fruits are different but brinjal is vegetable. Hence the correct answer is option (b).
- **6.** Music, Instrument, Paino, Guitar Both piano and guitar are music instrument. Hence the correct answer is option (b).
- 7. Apple, Banana, Mango Apple, banana and mango are different from each other. Hence the correct answer is option (a).
- 8. Pulses, Redgram, Moongdal Here, redgram and moongdal both are pulses. Hence the correct answer is option (a).
- **9.** Teachers, Educated, Employed All the teachers are educated and all the educated teacher are employed. Hence the correct answer is option (a).
- 10. Honest, Intelligent, Poor Some honest person can be poor as well as intelligent and some poor may be intelligent. Hence the correct answer is option (d).
- Stationery items, Pencils, Potatoes Here, Pencils are stationery item, but Pencils potato and pencils are different. Hence the correct answer is option (d).

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In this diagram, b, d is the region that represent persons who are educated and employed but not confirmed.

Hence, the correct answer is option (c).

17.



The intersection of triangle (that represents Hockey) and square (that represents Football) is 4.

Hence, the correct answer is option (d).



Here, 'V' represents the young doctors that live in rural areas. Hence, the correct answer is option (d).



Only '12' person takes Bournvita. Hence, the correct answer is option (a).

20. How many people take Lemon tea 13 + 10 + 23 = 46

'46' person take lemon tea.

Hence, the correct answer is option (c).



Here, \bigwedge represents students who passed in Physics.

students passed in Chemistry.

🔵 students passed in Mathematics.

Here, '5' students are passed in mathematics only. Hence, the correct answer is option (b).



Here 'II' area represents the urban hardworking people who are not educated.

Hence, the correct answer is option (a).

$$23. \begin{array}{c} 4 & 32 & 6 \\ 28 & 16 & 12 & 3 \\ 8 & 20 & 15 & 9 \\ 25 & 35 & 5 & 10 \end{array}$$

The numbers at '?' belongs to the intersection of all three sets, meaning it shares a common property with 12.

12 has prime factors $2^2 \times 3$.

Since, 60 shares the prime factors $2^2 \times 3$ (which 12 has). It is the best choice.

Here, '60' belongs in the region of the diagram marked by the question mark.

Hence, the correct answer is option (c).

24. Body Hand

> Here, correct answer is option (a). Body, Hand, Eatables. Here, hand is a body part & eatable is different.

25. Vegetables

Bottle Grass

Here, correct answer is option (c). Bottle gaurd is a kind of vegetable but grass is different.

26.

Here, correct answer is option (d). State, Districts, U-T As district is a part of state but U-T is different.

Mastering Aptitude and REASONING



angle Analogy and classification

1. The pattern is as follows: For 11:144 11 + 1 = 12 $12^2 = 144$ So for 16 : ?, we have 16 + 1 = 17 $17^2 = 289$ Hence, the correct answer is option (b). **2.** The pattern is as follows: For 12 : 145, we apply the patter $12 \times 12 + 1 = 145$ Logic applied = I term \times I term + 1 = II term So for 16 : ?, we have $16^2 + 1 = 256 + 1 = 257$ So, Hence, the correct answer is option (d). **3.** The pattern is as follows: For 168 : 182, we find the difference 182 - 168 = 14The difference between numbers is 14. 224 - 14 = 210So. Hence, the correct answer is option (a). **4.** The pattern is as follows: For 14 : 30, we apply the pattern $14 = 14 \times 1$ $30 = (14 \times 2) + 2$ $13 = 13 \times 1$ So, $28 = (13 \times 2) + 2$ Hence, the correct answer is option (a). 5. The pattern is as follows: For 350 : 175, we observe $350:175 = \frac{350}{175} = 2$

This means the first number is twice the second number. So, $121 \times 2 = 242$ Hence, the correct answer is option (a).

6. The pattern is as follows:

11:101::73:?

Zero is inserted between first and second number.

So, the number is 703.

Hence, the correct answer is option (d).

7. The pattern is as follows:

90 - 31 = 59

The difference between numbers is 59.

So, 43 + 59 = 102

Hence, the correct answer is option (c).

8. The pattern is as follows:

223 : 350 : : 519 : ? 223 = 2 + 2 + 3 = 7

Now, 7 + 1 = 8;

Here sum of digits of 1st number + 1 = Sum of digits of 2nd number $519 = 8^3 + 7 = 512 + 7$

Similarly,

350 = 3 + 5 + 0 = 8;

Now sum of digits of 519 = 5 + 1 + 9 = 15 and 15 + 1 = 16

On checking given options

736 = 7 + 3 + 6 = 16

Hence, the correct answer is option (a).

9. Given pattern is LK : NM : : XT : ?

Relationship between L and N:

- L is the 12th letter of the alphabet, and N is the 14th letter.
- The difference is +2.

Relationship between K and M:

- K is the 11th letter of the alphabet, and M is the 13th letter.
- The difference is +2.

Similarly,

X is the 24th letter. Adding 2 gives Z.

T is the 20th letter. Adding 2 gives V.

So result is ZV

Hence, the correct answer is option (c).

10. Given pattern is AP : BQ : : XT : ?

Relationship between A and B:

• Next letter of A is B

Relationship between P and Q:

• Next letter of P is Q

Similarly,

Next letter of W is X.

Next letter of M is N.

So result is XN.

Hence, the correct answer is option (c).

11. Given pattern abc : bdf : : pqr : ?

Relationship between 'abc' and 'bdf':

- 'a' and 'b' have difference of 1.
- 'b' and 'd' have difference of 2.
- 'c' and 'f' have difference of 3. Similarly,

• Next letter of 'p' with difference 1 is 'q'.

- Next letter of 'q' with difference 2 is 's'.
- Next letter of 'r' with difference 3 is 'u'. So result is pqr : qsu

Hence, the correct answer is option (c).

- **12.** Given pattern is HIRO : JKTQ : : LTFP : ?
 - $\begin{array}{l} H \rightarrow J & (+ \ 2 \ shift) \\ I \rightarrow K & (+ \ 2 \ shift) \\ R \rightarrow T & (+ \ 2 \ shift) \\ O \rightarrow Q & (+ \ 2 \ shift) \end{array}$

Similarly,

- L is the 12th letter. Adding 2 gives N.
- J is the 10th letter. Adding 2 gives L.
- F is the 6th letter. Adding 2 gives H.
- P is the 16th letter. Adding 2 gives R. So result is = LIFP : NLHR Hence, the correct answer is option (b).
- Insect leads Disease Similarly, war leads to destruction. Hence, the correct answer is option (d).
- 14. Float is the antonym of the Sink.Similarly, boat is the antonym of the Submarine.Hence, the correct answer is option (c).
- Line is used to make square. Similarly, arc is used to make circle. Hence, the correct answer is option (c).
- **16.** Many tress together form Forest.

Similarly, many solider together form Army. Hence, the correct answer is option (b).

- Interest is the income or earning for a money lender. Similarly, salary is the income or earning for an employee. Hence, the correct answer is option (a).
- Dismay is the antonym of Joy. Similarly, tend is antonym of the Ignore. Hence, the correct answer is option (b).
- 19. Obey is the antonym of Defy.Similarly, work is the antonym of the Rest.Hence, the correct answer is option (d).
- **20.** Laugh is an expression of Joy. Similarly, Weep is the expression of grief. Hence, the correct answer is option (a).
- **21.** Except Chennai, all are states. Hence, the correct answer is option (b).
- **22.** The pattern involves consistent alphabetical progressions or relationships (a) JKMP:
 - $J \rightarrow K$ (+1), $K \rightarrow M$ (+2), $M \rightarrow P$ (+3) Consistent pattern.
 - (b) TUWZ:
 - $T \rightarrow U (+1), U \rightarrow W (+2), W \rightarrow Z (+3)$ Consistent pattern. (c) MNPT:

 $M \rightarrow N$ (+1), $N \rightarrow P$ (+2), $P \rightarrow T$ (+4) — The last jump (+4) breaks the pattern.

(d) FGIL:

 $F \rightarrow G$ (+1), $G \rightarrow I$ (+2), $I \rightarrow L$ (+3) — Consistent pattern. Hence, the correct answer is option (c).

- 23. Except Goat, all are birds. Hence, the correct answer is option (a).
- **24.** Except Hoot, all are directly related to plant. Hence, the correct answer is option (c).
- **25.** Except Driving, all are water-based activities. Hence, the correct answer is option (d).
- **26.** Except Student, all are educator not learner. Hence, the correct answer is option (c).
- **27.** Except Home, all are used to make home. Hence, the correct answer is option (c).
- **28.** Except Roar, all are combination of animal and its sound. Hence, the correct answer is option (a).
- **29.** Except Student and Teacher, all represent a relationship where one is a living being and the other is its habitat. Hence, the correct answer is option (c).
- **30.** Except Pen and Nib, all have relationship of container and its content. Hence, the correct answer is option (a).
- **31.** Except HEK, In the other groups, the first letter is four letter ahead from the second letter and the third letter is three letters ahead from the first letter.

Hence, the correct answer is option (d).

- **32.** Except RL, there is a gap of 3 letters in between first and second letter. Hence, the correct answer is option (b).
- **33.** Except (44, 52), the first number is greater than the second number. Hence, the correct answer is option (c).
- **34.** Except (17,19,37), the first two numbers add up to the third number. Hence, the correct answer is option (b).
- **35.** Except 5-16, because in the other pairs, the second number either follows a prime-number trend or fits the pattern logically. Hence, the correct answer is option (c).

2 COUNTING OF FIGURES

1. On labelling the figure, we get



In this figure pattern is = $1 \times 1 + 2 \times 2 + 3 \times 3 + 4 \times 4$

$$= 1 + 4 + 9 + 16 = 30$$

Hence, the correct option is (d).

2. On labelling the given figure, we get



In rectangle ABDE, BECF, DEHG, EFIH, we have 1 circle each.

In rectangle ACIG, we have 1 circle. So, total number of rectangle = 4 + 1 = 5. Hence, the correct option is (c).

- On labelling the figure, we get From the figure, Triangle formed = ΔABC, ΔADE, ΔBDF, ΔCFE, ΔBCF, ΔGIH, ΔBGI, ΔGHF, ΔIHC. Total number of triangle = 9 Hence, the correct option is (b).
- 4. On labelling the figure, we get From the figure, Triangle formed = Δ EFG, Δ IFG, Δ IKL, Δ IKM, Δ IML, Δ IHB, Δ IJG, Δ ENI, Δ NIF, Δ IFJ, Δ EIF Total number of triangle = 9 + 2 = 11 Hence, the correct option is (a).
- 5. On labelling the figure, we get From the figure, Triangle formed = ΔABC, ΔABE, ΔABD, ΔΕΗΑ, ΔΑΗF, ΔΒΙD, ΔFIB, ΔAFB, ΔAFG, ΔFGB, ΔCHB, ΔCIA, ΔAFE, ΔBFD, ΔBAH, ΔAIB
 So, total number of triangle is 16. Hence, the correct option is (c).
- 6. On labelling the figure, we get From the figure, Triangle formed = ΔABI, ΔBIF, ΔΕΙD, ΔDIA, ΔBDE, ΔADE, ΔADB, ΔABE, ΔBJC, ΔCJF, ΔFJE, ΔΕJB, ΔΕBF, ΔΕΒC, ΔBCF, ΔΕCF, ΔΕKG, ΔGKH, ΔHKF, ΔFKE, ΔHEF, ΔGEF, ΔEGH, ΔGHF, ΔAEC, ΔDBF, ΔCEH, ΔBFG, ΔAHC So total triangles are 29.

Hence, the correct option is (a).

7. On labelling the figure, we get From the figure, Number of rectangles = ABEF, BFGC, AEGC, EGKJ, JMNK, HION, CDIH, CNOD, ACKJ, ACNM, ADOM = 11. Hence, the correct option is (d).











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- 8. On labelling the figure, we get From the figure, Horizontal lines : MP, IL, EH, AD Vertical lines : MA, NB, OC, PD Slant lines : IN, EO, AP, CH, BL, OL, NH, MD, IC, EB So, total number of lines 18. Hence, the correct option is (c).
- 9. On labelling the figure, we get From the figure, Quadrilateral formed = FHBA, FDCA, CGED, ABDF, AEDC, ABDE, AGHB, EGHD So total number of quadrilateral = 8. Hence, the correct option is (b).





10. On labelling the figure, we get



From the figure,

Parallelogram in the figure = ABFG, BFEC, AFBE, BECD, ACEG, AFDC So total number of parallelogram = 6.

Hence, the correct option is (d).

- 11. On labelling the figure, we get From the figure,
 Triangles in the figure = ΔADF, ΔABC, ΔADE, ΔBJD, ΔAIB, ΔAIC, ΔEJC, ΔBIE, ΔAEF, ΔAHD, ΔAHF, ΔBHI, ΔBDC, ΔCGF, ΔHIC, ΔHCE, ΔHJE, ΔDHE, ΔEGF, ΔADC, ΔBIE, ΔDJE, ΔDCE, ΔECF, ΔDCF, ΔBCE, ΔEIC.
 D So total number of triangles = 29. Hence, the correct option is (a).
- 12. On labelling the figure, we get From the figure, Number of triangles in ΔABC = ΔABC, ΔADC, ΔADB, ΔAMB, ΔAMC ΔKBI, ΔHIF and ΔCEF have same number of triangle as ΔABC.





Number of triangle in rectangle BCFI = Δ BDM, Δ BMI, Δ BIF, Δ BMC, AMDC, ACMG, ACMF, AMGF, ACBI, ACIF, AMJF, ABIF, AFMI, AMIJ Δ BLM, Δ MIL Total number of triangle = 5 + 5 + 5 + 5 + 16 = 36

Hence, the correct option is (c).

- **13.** On labelling the figure, we get From the figure, Number of triangle = $\triangle ABC$, $\triangle ABF$, $\triangle AGB$, $\triangle ABJ$ $\Delta ABK, \Delta ABE, \Delta DBE, \Delta ADH, \Delta ADI, \Delta ADE, D$ $\Delta BJF, \Delta KIF$ So total number of triangle = 11. Hence, the correct option is (a).
- Η В С G
- 14. On labelling the figure, we get From the figure, Number of triangle = $\triangle ABC$, $\triangle ADE$, $\triangle AFG$, Δ BJD Δ CJE, Δ BJC, Δ BFI, Δ CHG, Δ HIJ, Δ IJE, So total number of triangle = 11. Hence, the correct option is (b).





15. On labelling the figure, we get

ΔEIJ



From the figure,

Number of rectangle in rectangle ABCD = rectangle HMIL = rectangle TUYX = rectangle NOSR = $3 \times 4 = 12$

Number of other rectangle are AGHC, BDGH, DVLH, DIMU, WLYP, DHNY, BGYP, TLXP.

Hence, the correct option is (a).

16. On labelling the figure, we get



From the figure,

Number of parallelogram = ABFG, BGCH, CHID, DEIJ, FGKL, GHLM, HINM, INOJ, ACHF, ADIF, AEFJ, BDIG, BEJG, CEHJ, FHMK, FINK, FJOK, GINL, GJOL, HJOM, ABLK, ACMK, ADNK, AEOK, BDNL, BEOL, CDNM, AEOK, DENO, CEOM So total number of parallelogram = 30. Hence, the correct option is (d).

17. On labelling the figure, we get From the figure,
Number of triangles = ΔΑΕΕ, ΔΒΕG, ΔGDH, ΔFCH, ΔΕJI, ΔΙΚΕ, ΔLHK, ΔΙJM, ΔΙΜΚ, ΔMLK, ΔGJL, ΔIJK, ΔJKL, ΔIJL, ΔΙΚL, ΔJML So total number of triangles = 16. Hence, the correct option is (b).



18. On labelling the figure, we get



From the figure,

Number of triangles = $\triangle ABC$, $\triangle DEF$, $\triangle GHI$, $\triangle EFC$, $\triangle HIC$, $\triangle GJF$ So total number of triangles = 6.

Hence, the correct option is (c).

19. On labelling the figure, we get



From the figure,

Number of square unit = 8

Number of four unit square = 10

Number of three unit square (three column and three row) = 4

So total number of square = 18 + 10 + 4 = 32.

Hence, the correct option is (d).

20. On labelling the figure, we get



From the figure,

Number of square unit, we get 13. Number of square in combined units CRVA, QUBD, YTXI, SZJW, CDJI So total number of square = 18. Hence, the correct option is (a).

21. On labelling the figure, we get Number of triangle in square DHFB = ΔDBE, ΔBEF, ΔHED, ΔEHF, ΔDBF, ΔDHF, ΔDBH, ΔBFH = 8 Number of triangle in square AGIC = ΔADM, ΔAMB, ΔADB, ΔBCL, ΔCLF, ΔBCF, ΔFIH, ΔFIK, ΔKIH, ΔGJH, ΔGJD, ΔGHD + Number of triangle in square DHBF



$$= 12 + 8 = 20$$

So total number of triangles = 20. Hence, the correct option is (a).

- 22. On labelling the figure, we get From the figure, Number of triangles = ΔABC, ΔADE, ΔAFG, ΔBHC, ΔBDH, ΔCHE So total number of triangles = 6. Hence, the correct option is (b).
- 23. On labelling the figure, we get From the figure,
 Number of triangles = ΔABC, ΔADC, ΔABE, ΔADE, ΔBEF, ΔDEH, ΔHEG, ΔGEC, ΔEFC, ΔEBF, ΔBEC, ΔCED, ΔDEG, ΔBCD, ΔABD So total number of triangles = 15. Hence, the correct option is (b).





24. On labelling the figure, we get From the figure, Number of triangles = $\triangle ABC$, $\triangle DEF$, $\triangle GHI$, ΔBHD, ΔBHF, ΔBDF, ΔFIC, ΔCIE, ΔFCE, ΔAGD , ΔAGE , ΔADE , ΔDHG , ΔGEI , ΔHFI So total number of triangles = 15. Hence, the correct option is (c).



25. On labelling the figure, we get



From the figure,

Number of squares =AGQE, GQFB, EQHC, HQFD, IRVQ, RJQW, VQKU, QWUL, MSXQ, SQNY, XQOT, QTPY, MNPO, IJLK, ABCD So total number of square = 15.

Hence, the correct option is (c).



FAMILY RELATIONSHIPS

1. S and K are brothers \rightarrow This means they have the same parents. W is the mother of S \rightarrow Since S and K are brothers, W is also the mother of K.

M is the mother of $T \rightarrow$ This tells us T's mother is M.

T is the son of $K \rightarrow$ This means K is T's father.

Since K is T's father and M is T's mother, that makes M the wife of K.

So, K is the husband of M.

Hence, the correct answer is option (d).

- 2. Kalyan and Salman are brothers. Saloni is Kalyan's wife and Suchitra's sister. Syed is Salman's son. Since Saloni is married to Kalyan, and Syed is Salman's son, Saloni is Syed's aunt. Hence, the correct answer is option (d).
- 3. Let's break down the statement:

The woman says, "He is the brother of my mother's daughter." Mother's daughter refers to the woman herself (since she is her mother's daughter).

Therefore, "He is the brother of my mother's daughter" means that the person is the brother of the woman.

Thus, the person is the woman's brother. Hence, the correct answer is option (a).

4. Let's break down the statement:

"The only son of his mother" refers to Suraj himself, since he is the only son of his mother.

The girl is introduced as the daughter of Suraj.

Therefore, the girl is Suraj's daughter.

Hence, the correct answer is option (c).

- **5.** Let's break down the relationships:
 - P is the sister of $T \rightarrow P$ and T are siblings.
 - V is the brother of $K \rightarrow V$ and K are brothers.
 - T is the son of $V \rightarrow T$ is V's son.
 - L is the son of $K \rightarrow L$ is K's son.

Now, based on these relationships:

• T is the son of V, and V is the brother of K, so T and L are cousins.

Thus, T is related to L as his cousin.

Hence, the correct answer is option (d).

- 6. Let's break down the statement:
 - "My father's mother" refers to the girl's grandmother (the mother of her father).
 - "The only son of my father's mother" means the only son of the girl's grandmother, which is the girl's father.

Therefore, the man being introduced is the father of the girl.

So, the man is the father of the girl.

Hence, the correct answer is option (a).

- 7. Let's break down the relationships:
 - A is the brother of $R \rightarrow A$ and R are siblings.
 - C is the mother of $B \rightarrow C$ is B's mother.
 - M is the sister of $C \rightarrow M$ is C's sister.

Since C is B's mother, and M is C's sister, M is B's aunt.

Thus, M is B's aunt.

Hence, the correct answer is option (c).

- **8.** Let's break down the statement:
 - "My husband's father's son" refers to X's husband's brother (because "father's son" is X's husband's brother).
 - "Y is the brother of my husband's father's son" means Y is the brother of X's husband's brother, which makes Y the brother-in-law of X's husband.

Thus, Y is X's brother-in-law.

Hence, the correct answer is option (d).

- 9. Let's break down the relationships:
 - T is the brother of P's husband \rightarrow T is P's brother-in-law.
 - U is the mother of $T \rightarrow U$ is T's mother.
 - Q is the daughter of S and P and the granddaughter of $R \to Q$ is P's daughter, and R is Q's grandfather.

Now, we know:

- R is Q's grandfather.
- Since Q is the daughter of P, R is P's father.

So, T's mother (U) is married to R (P's father), meaning R is T's father-in-law.

Thus, R is T's father-in-law.

Hence, the correct answer is option (a).

- **10.** Let's break down the relationships:
 - Q's mother is the sister of P and daughter of M → This means P's sister is Q's mother, and M is P's mother (because M is the mother of P's sister).
 - S is the daughter of P and sister of T \rightarrow S and T are siblings, and P is their parent.

From this, we can deduce:

- M is the mother of P, and P is the parent of T.
- Therefore, M is T's grandmother.

Thus, M is T's grandmother.

Hence, the correct answer is option (d).

11. Rahul's grandmother's daughter is Rahul's paternal Aunt.

Her brother is Rahul's father.

So, Rahul defeated his father.

Hence, the correct answer is option (a).

- **12.** Let's break down the statement:
 - "The brother of her mother" refers to Meena's maternal uncle (her mother's brother).
 - "Aman is the son of the brother of her mother" means that Aman is the son of Meena's maternal uncle.

Therefore, Aman is Meena's cousin.

Hence, the correct answer is option (c).

- **13.** Let's break down the statement:
 - Ram said, "His son is my son's uncle".
 - If "my son's uncle" refers to Ram's brother (because the uncle of Ram's son would be Ram's brother), then the son of the old man is Ram's brother.
 - Therefore, the old man is Ram's father.

Thus, the old man is Ram's father.

Hence, the correct answer is option (b).

- **14.** Let's break down the statement:
 - "The father of his brother" refers to the father of the man in the photograph's brother. This means the father of the man in the photograph (because his brother's father is the same person as his own father).
 - "The only son of my grandfather" refers to the woman's father (since her grandfather's only son would be her father).

So, the father of the man in the photograph is the woman's father.

Therefore, the man in the photograph is the woman's brother.

Thus, the woman is the sister of the man in the photograph.

Hence, the correct answer is option (d).

- **15.** Let's break down the relationships:
 - A is the brother of $B \rightarrow A$ and B are siblings.
 - C is married to $D \rightarrow C$ and D are married.
 - C is the nephew of B → This means C is B's sister's or brother's son, so C is the son of B's sibling.

Now, since A is the brother of B, and C is the nephew of B, it follows that C is the son of A.

So, A is C's father, and since C is married to D, A is D's father-in-law.

Thus, A is D's father-in-law.

Hence, the correct answer is option (a).

- **16.** Let's break down the statement:
 - "The father of her uncle" refers to the woman's grandfather (since the father of her uncle is her grandfather).
 - "The daughter of the father of her uncle" refers to the woman's mother (since the daughter of her grandfather is her mother).
 - "The son of the daughter of the father of her uncle" refers to the son of the woman's mother, which is the woman's brother.

Thus, the man is the woman's brother.

Hence, the correct answer is option (b).

- 17. Let's break down the statement:
 - "His mother's brother" refers to Kartik's maternal uncle (since it's Kartik's mother's brother).
 - "The father of my son Nitin" refers to Vivan (since Vivan is Nitin's father).

So, Kartik's mother's brother is Vivan, meaning Vivan is Kartik's maternal uncle.

Therefore, Kartik is Vivan's nephew.

Hence, the correct answer is option (c).

- **18.** Let's break down the relationships:
 - A is the brother of $B \rightarrow A$ and B are siblings.

- C is married to $D \rightarrow C$ and D are married.
- C is the nephew of B → This means C is the son of B's sibling. Since A is B's sibling, C must be A's son.

Now, since C is A's son and C is married to D, A is D's father-in-law. Thus, A is related to D as his father-in-law.

Hence, the correct answer is option (a).

- **19.** Let's break down the statement:
 - "The grandson of my mother" refers to Arun's son (since the grandson of Arun's mother would be Arun's son).
 - "The wife of the grandson of my mother" refers to Arun's son's wife.

Thus, Arun is the father-in-law of the girl.

So, Arun is the father-in-law of the girl.

Hence, the correct answer is option (b).

- **20.** Let's break down the statement:
 - "My brother-in-law's father" refers to the father of the man's sister's husband (since the brother-in-law is the husband of the man's sister).
 - "The only daughter of my brother-in-law's father" refers to the only daughter of the father of the man's sister's husband, which is the man's sister (since she is the daughter of her father).
 - "She is the only daughter of the only daughter of my brother-in-law's father" means the woman is the daughter of the man's sister.

Therefore, the woman is the niece of the man.

So, the woman is the man's niece.

Hence, the correct answer is option (d).

- **21.** Let's break down the relationships:
 - C is the son of G, but G is not the mother of C → This means G must be C's father (since G is not the mother).
 - E and G are married \rightarrow E is G's wife, so E is married to G.
 - B is the brother of $G \rightarrow B$ is E's brother-in-law because he is G's brother.
 - F is the daughter of $E \rightarrow F$ is E's daughter.

Since B is the brother of G, B is E's brother-in-law.

Thus, the brother-in-law of E is B.

Hence, the correct answer is option (c).

- **22.** Let's analyze the given notations:
 - $P \times Q' \rightarrow P$ is the sister of Q.
 - $P + Q' \rightarrow Q$ is the daughter of P.
 - $P \div Q' \rightarrow P$ is the mother of Q.

We need to express "N is the aunt of M" using these symbols. Step-by-step breakdown:

• "Aunt" means N is the sister of M's parent.

- Let L be M's parent, so L is the mother of $M \rightarrow L \div M$ (since \div denotes mother).
- N is the sister of $L \rightarrow N \times L$ (since \times denotes sister).

Final Expression:

 $N \times L \div M$

(Meaning: N is the sister of L, and L is the mother of $M \rightarrow$ So, N is M's aunt.)

Thus, "N is the aunt of M" is correctly denoted as $N \times L \div M$. Hence, the correct answer is option (d).

- **23.** Let's analyze the given notations:
 - $M3N \rightarrow M$ is the mother of N.
 - $M4N \rightarrow M$ is the brother of N.
 - M9N \rightarrow M is the husband of N.
 - $M5N \rightarrow M$ is the daughter of N.

We need to find the correct expression for "C is the husband of B". Step-by-step breakdown:

- "C is the husband of B" → This directly matches the notation C9B (since 9 denotes "husband").
- The expression A5C P B3N does not directly represent this relationship.

Correct Expression:

 $C9B \rightarrow C$ is the husband of B.

Hence, the correct answer is option (d).

- **24.** Let's break down the given expression "R # P H Q % S" using the provided relationship symbols:
 - "R # P" \rightarrow R is the father of P.
 - "P H Q" \rightarrow P is the brother of Q.
 - "Q % S" \rightarrow Q is the husband of S.

Step-by-step breakdown of relationships:

- R is the father of P.
- P is the brother of Q, so R is also the father of Q (since they are siblings).
- Q is the husband of S, meaning S is Q's wife.

Finding the relation between S and R:

• Since Q is R's son and S is Q's wife, S is R's daughter-in-law.

Final Answer:

S is the daughter-in-law of R.

Hence, the correct answer is option (d).

- **25.** Let's break down the given expression "P H Q + R" using the provided notations:
 - "P H Q" \rightarrow P is the brother of Q.
 - "Q + R" \rightarrow Q is the daughter of R.

Step-by-step breakdown:

- Q is the daughter of R, meaning R is Q's parent (likely the mother or father).
- P is the brother of Q, meaning P and Q are siblings.

Conclusion:

- Since P and Q are siblings, and Q is the daughter of R, P is also the child of R.
- This means P is the son of R (because P is Q's brother).

Final Answer:

P is the son of R.

Hence, the correct answer is option (d).



 Let's analyze the pattern in the given code: MASON → NBTPO

Breaking it down letter by letter:

 $M \rightarrow N (+1)$ $A \rightarrow B (+1)$ $S \rightarrow T (+1)$ $O \rightarrow P (+1)$ $N \rightarrow O (+1)$

Each letter is shifted +1 forward in the alphabet. Now, applying the same pattern to WORLD:

$$\begin{split} W &\rightarrow X \ (+1) \\ O &\rightarrow P \ (+1) \\ R &\rightarrow S \ (+1) \\ L &\rightarrow M \ (+1) \\ D &\rightarrow E \ (+1) \end{split}$$

Thus, WORLD is coded as XPSME. Hence, the correct option is (a).

2. The pattern in the given code:

```
LEMON \rightarrow ELMNO
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The letters are arranged in alphabetical order:

• LEMON \rightarrow ELMNO

Now, applying the same pattern to CLUSTER:

• CLUSTER \rightarrow CELRSTU

Thus, CLUSTER is written as CELRSTU.

Hence, the correct option is (d).

- **3.** We can assign each letter a corresponding number based on its position in the alphabet:
 - P is the 16th letter.
 - I is the 9th letter.
 - P is the 16th letter.
 - E is the 5th letter.

So, PIPE \rightarrow 16 9 16 5.

Now, the given code 169165 can be split into 16, 9, 16, 5, which corresponds to the positions of the letters in the word "PIPE."

- Now, let's apply the same pattern to SWAN:
- S is the 19th letter.
- W is the 23rd letter.
- A is the 1st letter.
- N is the 14th letter.

So, SWAN \rightarrow 19 23 1 14.

The last digit is 4 (from the number 14 for N).

Thus, the last digit of SWAN is 4.

Hence, the correct option is (c).

4. Let's analyze the word "SEND" and its code 168:

We can assign each letter a number based on its position in the alphabet:

S = 19, E = 5, N = 14, D = 4

 $SEND = 19 + 5 + 14 + 4 = 42 \times 4 = 168$

Now, let's apply the same pattern to PURSE:

P = 16, U = 21, R = 18, S = 19, E = 5 PURSE = $16 + 21 + 18 + 19 + 5 = 79 \times 5 = 395$ Hence, the correct option is (b).

5. First, assign each letter a number based on its position in the alphabet:

S = 19, C = 3, H = 8, O = 15, L = 12 Now, for SCHOOL: 19 + 3 + 8 + 15 + 15 + 12 = 72 (this matches the given value for SCHOOL)

Next, for BLUE:

 $B = 2, \quad L = 12, \quad U = 21, \quad E = 5$ 2 + 12 + 21 + 5 = 40 (this matches the given value for BLUE) Now, for PINK: P = 16, \quad I = 9, \quad N = 14, \quad K = 11

16 + 9 + 14 + 11 = 50

So, based on this pattern, PINK will be written as 50.

Hence, the correct option is (a).

6. We need to find a pattern with letter values. First, let's assign each letter a number based on its position in the alphabet:

$$C = 3$$
, $O = 15$, $V = 22$, $E = 5$, $R = 18$, $E = 5$, $D = 4$

Now, add up the values of the letters in "COVERED": 3 + 15 + 22 + 5 + 18 + 5 + 4 = 72 (which matches the given value for COVERED) Now let's apply the same pattern to the word "REASONING":

 $\begin{array}{ll} R=18, \quad E=5, \quad A=1, \quad S=19, \quad O=15\\ N=14, \quad I=9, \quad N=14, \quad G=7 \end{array}$

Now, add up the values: 18 + 5 + 1 + 19 + 15 + 14 + 9 + 14 + 7 = 102So, the value for "REASONING" is 102.

Hence, the correct option is (b).

 Let's break down the logic for "DOL = 720" and "BOY = 750" by assigning each letter a number based on its position in the alphabet: For DOL:

D = 4, O = 15, L = 12

Now, let's try multiplying the values for DOL:

 $4 \times 15 \times 12 = 720$ (which matches the given value for DOL) For BOY:

B = 2, O = 15, Y = 25

Now, multiply the values for BOY:

 $2 \times 15 \times 25 = 750$ (which matches the given value for BOY) Now, let's apply the same method to GOA:

G = 7, O = 15, A = 1

Multiply the values for GOA:

 $7 \times 15 \times 1 = 105$

So, the code for "GOA" is 105.

Hence, the correct option is (a).

8. Let's analyze the pattern in the given codes.

1. DRIVE \rightarrow 59372

D = 5, R = 9, I = 3, V = 7, E = 2

2. SPUR \rightarrow 6489

S = 6, P = 4, U = 8, R = 9

Now, find the code for PRIDE:

P = 4, R = 9, I = 3, D = 5, E = 2

Thus, the code for PRIDE is 49352, which matches the given proof. Hence, the correct option is (c).

9. Let's analyze the pattern in the given code.

ARUN $\rightarrow 54$

We assign each letter its numerical position in the alphabet:

A = 1, R = 18, U = 21, N = 14

Now, sum the values:

1 + 18 + 21 + 14 = 54 (which matches the given code for "ARUN").

Now, find the code for VARUN:

$$V = 22$$
, $A = 1$, $R = 18$, $U = 21$, $N = 14$

Now, sum the values:

22 + 1 + 18 + 21 + 14 = 76

So, the code for VARUN is 76.

Hence, the correct option is (c).

10. Let's analyze the given pattern: EXPLAIN → XEALPNI

Observing the transformation:

- The first and second letters swap places: $E \leftrightarrow X \rightarrow X E$
- The third and fourth letters swap places: $\mathsf{P} \leftrightarrow \mathsf{L} \to \mathsf{A} \: \mathsf{L}$
- The fifth and sixth letters swap places: A \leftrightarrow I \rightarrow P N
- The last letter remains the same: $N \rightarrow I$

So, the pattern involves swapping adjacent letters in pairs. Now, applying the same pattern to FACTORY:

- Swap $F \leftrightarrow A \rightarrow A F$
- Swap $C \leftrightarrow T \rightarrow T C$
- Swap $O \leftrightarrow R \rightarrow R O$
- The last letter remains the same: $Y \rightarrow Y$

Thus, FACTORY is written as AFTCROY in the code language.

Hence, the correct option is (a).

11. Observing the relation between the number of letters and the given code:

- FLOWER has 6 letters \rightarrow Code 14
- DISTANCE has 8 letters \rightarrow Code 18

Let's analyze the pattern in the given words and their corresponding codes. A noticeable pattern is:

Code = (Number of letters \times 2) + 2 Verifying:

- FLOWER \rightarrow (6 × 2) + 2 = 12 + 2 = 14
- DISTANCE \rightarrow (8 × 2) + 2 = 16 + 2 = 18 Now, for BUREAUCRAT:
- BUREAUCRAT has 10 letters.

Using the formula:

 $(10 \times 2) + 2 = 20 + 2 = 22$ Thus, the code for BUREAUCRAT is 22. Hence, the correct option is (a).

12. Let's analyze the given pattern:
 FRIDGE → GTLHLK
 Observing the transformation for each letter:

F = G (+1) R = T (+2) I = L (+3) D = H (+4) G = L (+5)E = K (+6)

The pattern follows an increasing shift: +1, +2, +3, +4, +5, +6 for each successive letter.

Now, applying the same pattern to KETTLE:

$$K = L (+1)$$

$$E = G (+2)$$

$$T = W (+3)$$

$$T = X (+4)$$

$$L = Q (+5)$$

$$E = K (+6)$$

Thus, KETTLE is written as LGWXQK in this code language. Hence, the correct option is (b).

13. Let's analyze the given pattern.

- 1. CAB \rightarrow 6 C = 3, A = 1, B = 2 Product: 3 × 1 × 2 = 6
- 2. BED $\rightarrow 40$

$$B = 2$$
, $E = 5$, $D = 4$

Product: $2 \times 5 \times 4 = 40$

Now, for HAD:

$$H = 8$$
, $A = 1$, $D = 4$

Product: $8 \times 1 \times 4 = 32$

So, HAD is coded as 32.

Hence, the correct option is (c).

14. Let's break down the pattern for ANNUAL \rightarrow ZMMFZO:

Observing the transformation:

$A \rightarrow Z$	(shifted back by 1 letter)
$N \rightarrow M$	(shifted back by 1 letter)
$N \rightarrow M$	(shifted back by 1 letter)
$\mathbf{U} \to \mathbf{F}$	(shifted back by 15 letters)
$A \rightarrow Z$	(shifted back by 1 letter)
$L \rightarrow O$	(shifted forward by 1 letter)

So, the pattern alternates between shifting back by 1 letter and applying a larger shift (like -15 or +1).

Now, applying the same pattern to YEARLY:

$A \rightarrow Z$	(shifted back by 1 letter)
$Y \rightarrow B$	(shifted forward by 1 letter)
$E \rightarrow V$	(shifted back by 1 letter)
$A \rightarrow Z$	(shifted forward by 1 letter)
$R \rightarrow I$	(shifted back by 15 letters)
$L \rightarrow O$	(shifted forward by 1 letter)
$Y \rightarrow B$	(shifted back by 1 letter)

Thus, YEARLY is written as BVZIOB in the code language. Hence, the correct option is (a).

15. Let's analyze the pattern for COMBINED \rightarrow BCDEIMNO:

Observing the transformation, first separate the letters :

C, O, M, B, I, N, E, D

Now arrange these letters in alphabetical order, we get :

B, C, D, E, I, M, N, O

We observe this word formed 'BCDEIMNO' is the result of arranging the original letters in alphabetical order :

Now we apply same logic on word 'CREATING'.

Separate the letters : C, R, E, A, T, I, N, G

Arrange them in alphabetical order : A, C, E, G, I, N, R, T.

New code formed is : ACEGINRT

Thus, CREATING is written as ACEGINRT in the code language. Hence, the correct option is (d).

16. Let's analyze the pattern for ACTIVE \rightarrow CAITEV. Observing the transformation:

Here we break the word ACTIVE in pair of 2 letters each i.e.

AC	TI	VE

Now letters are reversal in pairs as follows :

CA	IT	EV

Lets try same logic for HFTZREOA.

HF TZ RE	OA
----------	----

On reversing we get

FH	ZT	ER	AO

So correct option is (b).

17. Let's break down the pattern for N = 28 and ORE = 76: For N = 28:

N is the 14th letter of the alphabet. If we multiply the position by 2: $14 \times 2 = 28$

Thus, N = 28 follows the pattern. For ORE = 76:

- O is the 15th letter.
- R is the 18th letter.
- E is the 5th letter.

Now, let's sum the positions:

$$15 + 18 + 5 = 38$$

Then multiply the sum by 2:

 $38 \times 2 = 76$

Thus, ORE = 76 follows the same pattern.

Now, let's apply this to PALE:

- P is the 16th letter.
- A is the 1st letter.
- L is the 12th letter.
- E is the 5th letter.

Sum the positions:

16 + 1 + 12 + 5 = 34

Then multiply by 2:

 $34 \times 2 = 68$

Thus, PALE is coded as 68.

Hence, the correct option is (a).

18. Let's analyze the pattern for MONKEY \rightarrow LPMLDZ. Comparing the letters:

(shifted back by 1)
(shifted forward by 1)
(shifted back by 1)
(shifted forward by 1)
(shifted back by 1)
(shifted forward by 1)

The pattern alternates between shifting each letter forward and backward by 1 position.

Now, applying this pattern to STROKE:

$S \rightarrow R$	(shifted back by 1)
$T \to U$	(shifted forward by 1)
$R \rightarrow Q$	(shifted back by 1)
$O \rightarrow P$	(shifted forward by 1)
$K \rightarrow J$	(shifted back by 1)
$E \rightarrow F$	(shifted forward by 1)

Thus, STROKE is written as RUQPFJ. Hence, the correct option is (d).

- 19. Let's analyze the pattern for For AU \rightarrow 21: A = 1, U = 21, Multiply: 1 × 21 = 21. For EGG \rightarrow 245: E = 5, G = 7, Multiply: 5 × 7 × 7 = 245. For BAKE: B = 2, A = 1, K = 11, E = 5, Multiply: 2×1×11×5= 110. Hence, the correct option is (c).
- **20.** Let's analyze the pattern for $54831 \rightarrow 63922$. Comparing the numbers:

$5 \rightarrow 6$	(shifted forward by 1)
$4 \rightarrow 3$	(shifted back by 1)
$8 \rightarrow 9$	(shifted forward by 1)
$3 \rightarrow 2$	(shifted back by 1)
$1 \rightarrow 2$	(shifted forward by 1)

It seems the pattern alternates between shifting numbers forward and backward by 1.

Now, let's apply the same pattern to 86274:

$8 \rightarrow 9$	(shifted forward by 1)
$6 \rightarrow 5$	(shifted back by 1)
$2 \rightarrow 3$	(shifted forward by 1)
$7 \rightarrow 6$	(shifted back by 1)
$4 \rightarrow 5$	(shifted forward by 1)

Thus, 86274 is coded as 95365.

Hence, the correct option is (a).

21. Let's analyze the pattern for CONCERT \rightarrow CNEROCT:

Observing the transformation:

 $CONCERT \rightarrow CNEROCT$

• It seems the letters are rearranged in pairs.

The pattern appears to be:

- First and second letters remain in the same place: C and O stay in the same positions.
- The third and fourth letters are swapped: N and C \rightarrow C and N.
- The fifth and sixth letters are swapped: E and $R \rightarrow R$ and E.
- The seventh letter remains in place: T stays as T.

Now, applying this pattern to SMARTER:

• S and M stay in the same places.

- A and R are swapped: $A \leftrightarrow R$.
- T and E are swapped: $T \leftrightarrow E$.
- R stays in the same place. Thus, SMARTER is written as RATEMSR. Hence, the correct option is (b).

22. Let's break down the code pattern for below: For FAKE \rightarrow 52106: Alphabets are assigned the numbers as : F = 6, A = 1, K = 11, E = 5.∴ Here F(-1) = 6 - 1 = 5A(+1) = 1 + 1 = 2K(-1) = 11 - 1 = 10E(+1) = 5 + 1 = 6This gives FAKE = 52106For MAD \rightarrow 1225: M = 13, A = 1, D = 4.M(-1) = 13 - 1 = 12A(+1) = 1 + 1 = 2D(-1) = 4 - 1 = 3This gives MAD = 1223So, we observe alternately (-1), (+1), (-1), (+1) pattern is followed. For DEER: D = 4, E = 5, E = 5, R = 18.We get (4 - 1)(5 + 1)(5 - 1)(18 + 1) = 36419Thus, DEER \rightarrow 36419. Hence, the correct option is (c). **23.** Let's analyze the pattern for WATER \rightarrow XZUDS: Observing the transformation: (-1-: ft-- 1 f---- -- 1 l--- 1 l-++---) 347

$N \to X$	(shifted forward by 1 letter)
$A \rightarrow Z$	(shifted back by 1 letter)
$T \rightarrow U$	(shifted forward by 1 letter)
$E \rightarrow D$	(shifted back by 1 letter)
$R \rightarrow S$	(shifted forward by 1 letter)
1 1	1:0: 1

It seems the pattern alternates between shifting letters forward and backward by 1 position.

Now, let's apply this pattern in reverse to find the word for BMHKF:

$B \rightarrow A$	(shifted back by 1 letter)
$M \rightarrow N$	(shifted forward by 1 letter)
$\mathrm{H} \mathop{\rightarrow} \mathrm{G}$	(shifted back by 1 letter)

 $K \rightarrow L$ (shifted forward by 1 letter) $F \rightarrow E$ (shifted back by 1 letter)

Thus, BMHKF is coded as ANGLE. Hence, the correct option is (c).

24. Let's break down the pattern for SUNDAY \rightarrow DNUAYS. Observing the transformation find following shifting of letters.



Now we follow same pattern to write MOTHER and we get



Thus, MOTHER is written as HTOERM in the code language. Hence, the correct option is (b).

25. Let's analyze the given pattern for BEAM \rightarrow 2514. Observing the transformation:

B = 2, E = 5, A = 1, M = 13

It seems the pattern involves assigning the position of each letter in the alphabet to the code directly. Now, let's verify:

B = 2, E = 5, A = 1

• M = 13, but we take only the last digit $(13 \rightarrow 3)$.

Thus, BEAM \rightarrow 2514 is formed by taking the position of each letter and, if needed, reducing multi-digit numbers to their last digit.

Now, let's apply this pattern to EASY:

$$E = 5$$
$$A = 1$$

- S = 19, but take the last digit $(19 \rightarrow 9)$
- Y = 25, but take the last digit $(25 \rightarrow 7)$
- Thus, EASY \rightarrow 5117.

Hence, the correct option is (a).

26. Let's analyze the given pattern for CONNECT \rightarrow 74.

Observing the pattern:

C = 3, O = 15, N = 14, N = 14, E = 5, C = 3, T = 20Now, let's add the values of the letters:

3 + 15 + 14 + 14 + 5 + 3 + 20 = 743 + 15 + 14 + 14 + 5 + 3 + 20 = 74So, the code is the sum of the letter values in the word. Now, let's apply the same pattern to SPECIAL:

S = 19, P = 16, E = 5, C = 3, I = 9, A = 1, L = 12

Now, sum the values of the letters: 19 + 16 + 5 + 3 + 9 + 1 + 12 = 6519 + 16 + 5 + 3 + 9 + 1 + 12 = 65So, the code for SPECIAL is 65. Hence, the correct option is (c).

27. Let's analyze the given transformation for MACHINE \rightarrow CAMHENI: Observing the pattern, lets see how transformation is done.



Here alternate lettes are swapped in odd position i.e. Ist and third position. (M and C) and (I and E) are swapped. But even positions remain same. Lets apply same for



Thus, MONSTER is written as NOMSRET in the code language. Hence, the correct option is (a).

28. Let's analyze the given pattern for VICTORY \rightarrow CIVSYRO. Observing the transformation:

It seems like the pattern involves swapping positions of letters.



We observe 1st and 3rd position are swapped leaving 2nd position (I) same, T changes to S (-1 position).

Similarly 5th and 7th positions letters are swapped, leaving 6th position R as same.

Now, applying the same pattern to TRAITOR:



Thus, TRAITOR is written as ARTHROT in the code language. Hence, the correct option is (d).

29. Let's analyze the pattern used to code ANGEL as BOHFM. Comparing each letter:

$A \rightarrow B$	(shifted forward by 1 letter)
$N \rightarrow O$	(shifted forward by 1 letter)
$G \rightarrow H$	(shifted forward by 1 letter)

$E \rightarrow F$	(shifted forward by	v 1 letter)
-------------------	---------------------	-------------

 $L \rightarrow M$ (shifted forward by 1 letter)

So, each letter is shifted forward by 1 position in the alphabet. Now, let's apply the same pattern to SAVAGE:

$S \rightarrow T$	(shifted forward by 1 letter)
$A \rightarrow B$	(shifted forward by 1 letter)
$V \rightarrow W$	(shifted forward by 1 letter)
$A \rightarrow B$	(shifted forward by 1 letter)
$G \rightarrow H$	(shifted forward by 1 letter)
$E \rightarrow F$	(shifted forward by 1 letter)

The third letter in the code for SAVAGE is W. Hence, the correct option is (c).

30. Let's analyze the pattern in the given code: MOTIVATION → VITOMNOITA

Observing the transformation:

- The pattern involves splitting the word in two halves:
 - ◆ MOTIVATION → Split into MOTI and VATION
 - MOTI is reversed to ITOM
 - VATION is reversed to NOITAV

Now, putting them together: ITOM + NOITAV = VITOMNOITA Now, let's apply the same pattern to APPRECIATE:

- Split APPRECIATE into two halves:
 - First half: APPRE
 - Second half: CIATE
- Reverse both halves:
 - APPRE becomes ERPPA
 - CIATE becomes ETAIC

Now, putting them together: ERPPA + ETAIC = ERPPAETAIC Thus, APPRECIATE is written as ERPPAETAIC in the code language. Hence, the correct option is (a).

5 CUBES AND DICES

- 1. From the first and third figures, if the face containing '6' is common to both dice but lies on different faces of the different dice, then rotate it in a clockwise direction, and the face containing '2' is opposite to the face containing '6' as shown. Hence, the correct answer is option (a).
- 2. When this figure is folded to form a cube then the face bearing three dots will lie opposite the face bearing SIX dots. The opposite faces are shown as:



Hence, the correct answer is option (d).

- **3.** When this figure is folded to form a cube, A will be opposite E, and F will be opposite D, leaving C and D adjacent to each other on the same face. The alphabets that will not lie on opposite faces are C and D. Hence, the correct answer is option (c).
- **4.** From the first and second figures, if the face containing '3' is common to both dice but lies on different faces of the different dice, then rotate it in a clockwise direction. The face containing '4' is opposite to the face containing '5' as shown.



Hence, the correct answer is option (c).

5. When this figure is folded to form a cube, then the face bearing 1 will lie on the opposite to face bearing 3 and the number lie opposite to 6 on cube B is 5. The sum of 5 and 3 is 8.

Hence, the correct answer is option (b).

6. From the first and second figures, if the face containing '4' is common to both dice but lies on different faces of the different dice, then rotate it in a clockwise direction. The face containing '6' is opposite to the face containing '1' as shown.

Hence, the correct answer is option (d).

- 7. From the given arrangement, if the face containing 'Seed' is common and we fold the net into a cube, then the faces are arranged accordingly. The face containing 'Flower' is opposite to the face containing 'Seed' as shown. Hence, the correct answer is option (b).
- 8. When this figure is folded to form a cube then the face bearing six dots will lie opposite the face bearing three dots. The opposite faces are shown as:

Hence, the correct answer is option (d).



9. When this figure is folded to form a cube, Option (c) will be the result.



Hence, the correct answer is option (c).

- 10. When this figure is folded to form a cube then the face bearing five dots will lie opposite the face bearing three dots. Hence, the correct answer is option (b).
- When this figure is folded to form a cube then the face bearing T will lie opposite the face bearing Top.

Hence, the correct answer is option (b).

- **12.** When this figure is folded to form a cube, then the face bearing F will lie on the opposite to face bearing B and the D adjacent to E on cube. Hence, the correct answer is option (d).
- **13.** When this figure is folded to form a cube, then the face bearing 5 will lie on the opposite to face bearing 3 and 4 will lie on the opposite to face bearing 1.

Hence, the correct answer is option (b).

- 14. From the given arrangement, we observe the two views of the die. By analyzing the common faces and their relative positions, we determine that the face with 4 dots is opposite to the face with 5 dots. Hence, the correct answer is option (b) 5.
- 15. From the given arrangement, we observe the three views of the die. By analyzing the common faces and their relative positions, we determine that the face with (c) is opposite to the face with *. Hence, the correct answer is option (c).
- **16.** From the given arrangement, the sum of the numbers on opposite faces of a standard die should always be 7. By verifying each option, we find that only option (b) maintains this rule correctly. Hence, the correct answer is option (b).
- 17. The original cube has a side of 6 cm and is cut into smaller cubes of side 2 cm. This results in 27 smaller cubes. Cubes with three painted faces are always the corner cubes. Since a cube has 8 corners, there are 8 such cubes. Hence, the correct answer is option (c).
- **18.** The original cube has a 6 cm side and is cut into 2 cm cubes, resulting in $3 \times 3 \times 3 = 27$ smaller cubes. Cubes with only one face painted are located at the center of each face of the original cube. A cube has 6 faces, and each face contains exactly one center cube with only one painted face. Hence, the correct answer is option (c).

- 19. The original cube has a side of 6 cm and is cut into 2 cm cubes, resulting in 3×3×3=27 smaller cubes. Cubes with no faces painted are located entirely inside the original cube, meaning they are not exposed to any surface. In this case, there is only one cube in the very center of the large cube that is completely surrounded by other cubes and has no exposed faces. Hence, the correct answer is option (b).
- **20.** The original cube has a side length of 6 cm and is cut into smaller cubes of 2 cm. The number of small cubes along each edge is calculated as: 6/2=3. Since the cube is three-dimensional, the total number of small cubes is: $3\times3\times3=27$.

Hence, the correct answer is option (a).

$igsim \mathbf{6}igsim$ clock and calendar

1. To find the day on 3 February 2019, given that 3 March 2020 was a Tuesday:

Steps:

- 1. Days between 3 March 2020 and 3 February 2019:
 - 2020 is a leap year: 366 days.
 - February 2019 had 28 days.
 - Total days: 394 days.
- 2. Remainder when 394 is divided by 7:
 - $394 \div 7 = 56$ remainder 2.
- 3. Count 2 days back from Tuesday:
 - Tuesday → Monday → Sunday.
 Final Answer: 3 February 2019 was a Sunday.
 Hence, the correct option is (c).
- **2.** To find the angle between the hour and minute hands at 2:00, follow these steps:

Step 1: Calculate the Position of the Hour Hand

- The hour hand moves 30° per hour (since 360° is divided by 12 hours).
- At 2:00, the hour hand is at: $2 \times 30 = 60^{\circ}$

Step 2: Calculate the Position of the Minute Hand

- The minute hand moves 6° per minute (since 360° is divided by 60 minutes).
- At 0 minutes (on the hour), the minute hand is at: 0×6=0°

Step 3: Find the Angle Between the Hands

The angle between the two hands is the absolute difference between their positions:

 $60^{\circ} - 0^{\circ} = 60^{\circ}$

Final Answer: The angle between the clock hands at 2:00 is 60°. Hence, the correct option is (b).

- **3.** To determine the day on January 1, 2019, given that January 1, 2018 was a Monday, follow these steps:
 - 1. Count the number of days in 2018:
 - 2018 is a common year, so it has 365 days.
 - 2. Find the remainder when dividing 365 by 7:
 - $365 \div 7 = 52365 \setminus div 7 = 52$ weeks with a remainder of 1.
 - 3. Count 1 day forward from Monday:
 - Monday + 1 day = Tuesday.
 - Thus, January 1, 2019 will be a Tuesday.

Answer: Tuesday.

Hence, the correct option is (a).

- **4.** To find the day of the week on January 4, 2028, given that January 20, 2030 is a Sunday, follow these steps:
 - 1. Count the number of years between 2028 and 2030:
 - From January 4, 2028, to January 20, 2030, there are 2 years and 16 days.
 - 2. Determine the leap years:
 - 2028 is a leap year, so it has 366 days.
 - 2029 is a common year, so it has 365 days.
 - 3. Calculate the total number of days:
 - 2028 (leap year): 366 days
 - 2029 (common year): 365 days
 - Total days: 366 + 365 = 731 days
 - 4. Find the remainder when divided by 7:
 - $731 \div 7 = 104$ weeks with a remainder of 3.
 - 5. Count 3 days backward from Sunday (January 20, 2030):
 - Sunday \rightarrow Saturday \rightarrow Friday \rightarrow Thursday \rightarrow Wednesday
 - So, January 4, 2028, is a Tuesday.

Answer: Tuesday.

Hence, the correct option is (c).

5. To prove how many distinct points the hour and minute hands meet in an analogue clock:

Explanation:

• The hour and minute hands of a clock meet 11 times in 12 hours.

This is because:

- The minute hand moves faster than the hour hand, and they align 11 times in a 12-hour period.
- They meet once at 12:00, and then again at specific intervals throughout the day.

Thus, in a 24-hour period, the hands meet 22 times (11 times in the first 12 hours and 11 times in the next 12 hours).

The hands meet 11 times in 12 hours, so the answer is 11 distinct points. Hence, the correct option is (b).

- **6.** To check which of the following is a leap year:
 - 1600: Divisible by 4, divisible by 100, and divisible by 400. Hence, 1600 is a leap year.
 - 2000: Divisible by 4, divisible by 100, and divisible by 400. Hence, 2000 is a leap year.
 - 2400: Divisible by 4, divisible by 100, and divisible by 400. Hence, 2400 is a leap year.

All of these are leap years.

Hence, the correct option is (d).

7. In a span of 100 years, there are generally 24 leap years.

Here's the breakdown:

- A leap year occurs every 4 years.
- However, years divisible by 100 are not leap years unless they are also divisible by 400.

So in 100 years:

- Normally, 25 years would be divisible by 4.
- But the century year (like 1900) is not a leap year.
- Thus, 24 leap years.

Hence, the correct option is (b).

8. Weekend means Saturday & Sunday together. In total we have 52 weeks in a year. So there are 52 weekends in a year.

In normal we have 104 Weekend Days.

We know that each normal year has 365 days or 52 weeks plus one day, and each week has two weekend days, which means there are approximately 104 weekend days each year.

Whereas in a leap year we have 366 days it adds one more day to the year. And what makes the change is the starting day of the year.

Hence, the correct option is (a).

9. To determine the day of the week for 17th October given that 14th September is a Tuesday, we can follow these steps:

Step 1: Calculate the Number of Days Between 14th September and 17th October

- September has 30 days, so from 14th September to 30th September, the number of days is: 30 14 = 16 days
- Now, add the 17 days of October (from 1st October to 17th October).

So, the total number of days between 14th September and 17th October is: 16 + 17 = 33 days

Step 2: Find the Remainder When Dividing by 7

Since there are 7 days in a week, we divide the total number of days by 7 and find the remainder:

 $33 \div 7 = 4$ remainder 5

This means 33 days equals 4 full weeks (which brings us back to the same day, Tuesday) and 5 extra days.

Step 3: Count 5 Days Forward from Tuesday

- Tuesday + 1 day \rightarrow Wednesday
- Wednesday + 1 day \rightarrow Thursday
- Thursday + 1 day \rightarrow Friday
- Friday + 1 day \rightarrow Saturday
- Saturday + 1 day \rightarrow Sunday

Final Answer: 17th October will be a Sunday.

Hence, the correct option is (c).

10. To find the year after 1988 that has the same calendar as 1988, we need to check the following:

Step 1: Leap Year Status

- 1988 was a leap year (divisible by 4, and divisible by 400 if divisible by 100).
- A leap year has 366 days, which means it has an extra day compared to a regular year.

Step 2: Calculate the Number of Odd Days

- In a regular year, there is 1 odd day (since 365 days \div 7 leaves a remainder of 1).
- In a leap year, there are 2 odd days (since 366 days ÷ 7 leaves a remainder of 2).

Step 3: Checking Years After 1988

We are looking for the next leap year with the same number of odd days, so we will check subsequent years:

- 1989: Not a leap year, 1 odd day.
- 1990: Not a leap year, 1 odd day.
- 1991: Not a leap year, 1 odd day.
- 1992: Leap year, 2 odd days.
- 1993: Not a leap year, 1 odd day (same as 1988, since 1 odd day is same).

Final Answer:

The year 1993 will have the same calendar as 1988, since it has the same leap year status and the same number of odd days. Therefore, the answer is 1993.

Hence, the correct option is (c).

11. To find the day of the week on January 12, 1979, given that January 12, 1980 was a Saturday, follow these steps:

Step 1: Count the number of days between January 12, 1979, and January 12, 1980.

Since 1979 is not a leap year, it has 365 days.

Step 2: Find the number of odd days

365 days divided by 7 gives a remainder of 1 (since $365 \div 7 = 52$ weeks +1).

This means there is 1 odd day between January 12, 1979, and January 12, 1980.

Step 3: Subtract 1 day from Saturday

Since January 12, 1980 is a Saturday, subtracting 1 odd day (or 1 day) will give us Friday.

Final Answer: January 12, 1979 was a Friday.

Hence, the correct option is (b).

- 12. To find the number of odd days, divide 366 by 7: 366 ÷ 7 = 52 weeks with a remainder of 2 So, the number of odd days in a leap year is 2. Final Answer: 2 odd days. Hence, the correct option is (b).
- **13.** The two hands of a clock coincide 22 times in a day.

Explanation:

- In every 12-hour period, the hands coincide 11 times.
- Since there are 24 hours in a day, the hands coincide 22 times (11 times in the first 12 hours and 11 times in the next 12 hours).

Final Answer: 22 times in a day.

Hence, the correct option is (c).

- **14.** If the two hands of a clock are 3 minute divisions apart, the angle between them can be calculated as follows:
 - Each minute division corresponds to 6° (since 360°/60 minutes = 6° per minute).
 - So, for 3 minute divisions, the angle is: $3 \times 6^\circ = 18^\circ$
 - The angle between the hands is 18°.

Hence, the correct option is (b).

15. The clock gains 15 minutes per day. From 12:00 noon to 4:00 a.m. the next day is 16 hours.

Since the clock gains 15 minutes every 24 hours, in 16 hours, it will gain:

 $15/24 \times 16 = 10$ minutes

So, at 4 : 00 a.m., the clock will show 4 : 10 a.m..

Answer: 4 : 10 a.m.

Hence, the correct option is (a).

- 16. To find how many times the minute and hour hands of the clock are at right angles between 4 a.m. and 5 a.m., we follow these steps:Step 1: Understand the movement of the clock hands
 - The minute hand moves 6° per minute (since 360° is divided by 60 minutes).
 - The hour hand moves 0.5° per minute (since 30° is moved per hour and there are 60 minutes in an hour).
 - At right angles, the difference between the angles of the minute and hour hands will be 90° or 270° (since there are two possible right-angle positions).

Step 2: Calculate the time intervals for right angles

The general formula to calculate when the hands are at right angles is:

Angle between the minute and hour hand = |(30H + 0.5M) - (6M)|

Where HH is the hour and MM is the minute. We want to find when this angle is either 90° or 270°.

Between 4 : 00 and 5 : 00, there are 3 instances where the hands form a right angle:

- Around 4 : 16 (approx 16.36 minutes past 4 : 00).
- Around 4 : 32 (approx 32.73 minutes past 4 : 00).
- Around 4 : 48 (approx 48.73 minutes past 4 : 00).

Final Answer: There are 3 times between 4 a.m. and 5 a.m. when the minute and hour hands are at right angles.

Hence, the correct option is (b).

17. To determine the day of the week on January 1, 2010, given that January 1, 2006 was a Sunday, follow these steps:

Step 1: Calculate the Number of Days Between January 1, 2006 and January 1, 2010

- 2006: Non-leap year (365 days)
- 2007: Non-leap year (365 days)
- 2008: Leap year (366 days)
- 2009: Non-leap year (365 days)

Total number of days between January 1, 2006, and January 1, 2010:

365 + 365 + 366 + 365 = 1461 days

Step 2: Find the Remainder When Dividing by 7

Since there are 7 days in a week, we calculate the remainder of 1461 when divided by 7 to find how many days forward it is from Sunday:

 $1461 \div 7 = 208$ remainder 5

This means 1461 days equals 208 full weeks (which brings us back to Sunday) and 5 extra days.

Step 3: Count 5 Days Forward from Sunday

• Sunday + 1 day \rightarrow Monday

- Monday + 1 day \rightarrow Tuesday
- Tuesday + 1 day \rightarrow Wednesday
- Wednesday + 1 day \rightarrow Thursday
- Thursday + 1 day \rightarrow Friday Final Answer: January 1, 2010, was a Friday. Hence, the correct option is (c).
- 18. To find the day of the week 350 days from Monday: Step 1: Divide 350 by 7 (Days in a Week)

350÷7=50 remainder 0

• 350 days is exactly 50 full weeks, so it brings us back to the same day: Monday.

Final Answer: 350 days from Monday will be a Monday. Hence, the correct option is (a).

19. To find the day of the week after 94 days from Thursday:

Step 1: Divide 94 by 7 (Days in a Week)

94÷7=13 remainder 3

- 94 days consists of 13 full weeks (which bring us back to the same day, Thursday)
- Remainder 3 means we move 3 days forward from Thursday.

Step 2: Count 3 Days Forward

- Thursday + 1 day \rightarrow Friday
- Friday + 1 day \rightarrow Saturday
- Saturday + 1 day \rightarrow Sunday

Final Answer: After 94 days, it will be Sunday.

Hence, the correct option is (a).

- 20. Step 1: Identify the Day Sameer Watched the Movie
 - Sameer watches movies only on Thursdays.
 - He went for a movie 9 days ago.

Step 2: Find Today's Day

- 9 days ago was a Thursday.
- Since a week has 7 days, we break 9 days into: 7 + 2 = 97 + 2 = 9
- 7 days ago was also a Thursday, and 2 extra days forward brings us to Saturday.

Final Answer: Today is a Saturday.

Hence, the correct option is (d).

- **21.** Step 1: Identify the 7th Day
 - The 7th day is three days earlier than Friday.
 - Counting backward from Friday:
 - Thursday \rightarrow 1 day earlier
 - Wednesday \rightarrow 2 days earlier

• Tuesday \rightarrow 3 days earlier

Thus, the 7th day of the month is a Tuesday.

Step 2: Find the 19th Day

- The difference between 7th and 19th is: 19 7 = 12 days
- Since a week has 7 days, divide 12 by 7: 12 mod 7 = 5 (Remainder)
- Moving 5 days forward from Tuesday:
 - Wednesday (1 day)
 - Thursday (2 days)
 - Friday (3 days)
 - Saturday (4 days)
 - Sunday (5 days)

Final Answer: The 19th day of the month will be a Sunday.

Hence, the correct option is (a).

22. To determine the day of the week on 1st November, given that 1st October was a Sunday, follow these steps:

Step 1: Count the Days in October

- October has 31 days.
- The number of extra days beyond complete weeks is found by: 31 mod 7=3 (Since 31 days contain 4 full weeks and 3 extra days)

Step 2: Move Forward by 3 Days

- 1st October \rightarrow Sunday
- Adding 3 days:
 - 2nd October \rightarrow Monday
 - 3rd October \rightarrow Tuesday
 - 4th October \rightarrow Wednesday
 - ... (continue shifting forward)
 - 1st November \rightarrow Wednesday

Final Answer: 1st November will be a Wednesday.

Hence, the correct option is (c).

23. To find the total rotation undergone by the minute hand in 255 minutes, follow these steps:

Step 1: Rotation of the Minute Hand per Minute

- The minute hand completes one full rotation (360°) in 60 minutes.
- So, the rotation per minute is: $360^\circ \div 60 = 6^\circ$ per minute

Step 2: Total Rotation in 255 Minutes

• The total rotation is: $255 \times 6 = 1530^{\circ}$

The minute hand rotates 1530° in 255 minutes.

Hence, the correct option is (b).

- **24.** Angle Between Clock Hands at 6:24
 - 1. Hour Hand Position:
 - At $6:00 \rightarrow 180^{\circ}$

- Moves 12° in 24 minutes $\rightarrow 192^{\circ}$
- 2. Minute Hand Position:
 - At 24 minutes $\rightarrow 144^{\circ}$
- 3. Angle Between Hands:

 $|192 - 144| = 48^{\circ}$

Larger angle: $360 - 48 = 158^{\circ}$

Final Answer: 158°

Hence, the correct option is (d).

25. Calculate the Angle Moved by the Hour Hand

The hour hand moves 30° per hour (since 360° is divided by 12 hours).

At 10 : 00, the hour hand is at:

 $10 \times 30 = 300$

By 10:30, the hour hand has moved further. Since it moves 30° in 60 minutes, in 30 minutes, it moves:

30/2 = 15

The minute hand moves 6° per minute (since 360° is divided by 60 minutes).

At 30 minutes, the minute hand is at:

 $30 \times 6 = 180^{\circ}$

The angle between the two hands is the absolute difference between their positions:

 $315^{\circ} - 180^{\circ} = 135^{\circ}$

Hence, the correct option is (d).

7 ightarrow LOGICAL VENN DIAGRAM

- Examination, Question, Practice
 Here, some questions are asked in examination
 and some in practice but examination and
 practice are different from each other.
 Hence, the correct answer is option (b).
 Example 1
- 2. Mercury, Mars and Planets Merc Here, both Mars and Mercury types of planet so Hence, the correct answer is option (a).
- 3. Human beings, Teachers and Graduates Here, both teachers and graduate are human. Also some teachers are graduate and vice-versa.

Hence, the correct answer is option (c).



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4. Copper, Paper and Wire Here, some wires are made of copper but paper is different from copper and wire.



Hence, the correct answer is option (d).

5. Protons, Electrons and Atoms

An atom consist of protons and electrons, so these are parts of an atom but both are different.



Hence, the correct answer is option (a).

6. Yak, Zebra and Bear

Here, Yak, Zebra and Bear all are different from each other. So there is no relation.



Hence, the correct answer is option (b).

7. Nurse, Doctor and Women A person can be both a women and a nurse, a woman and a doctor, or even all three, a woman who is both a nurse or a doctor.

Hence, the correct answer is option (d).

8. Truck, Ship and Goods Truck and ship are different from each other but goods are carried by trucks as well as ships.

Hence, the correct answer is option (c).

9. Flute, Violin and Musical Instruments Flute and Violin both are Musical instrument but both are different from each other.

Hence, the correct answer is option (c).

10. Fractions, Rational Numbers and Whole Numbers Every whole is a rational number. All rational number are real numbers and whole number.

Hence, the correct answer is option (a).


Direction (11-15)



- **11.** '4' is area that is cultivated by wheat and maize only. Hence the correct answer is option is option (b).
- 12. '3' is cultivated by maize only. Hence, the correct answer is option (b).
- **13.** '1' area is cultivated by uneseed only. Hence, the correct answer is option (a).
- **14.** '5' area is cultivated by wheat only. Hence, the correct answer is option (c).
- **15.** '11' is cultivated by gram only. Hence, the correct answer is option (d).

Direction (16-20)



- **16.** '9' people who are educated, hardworking and honest but not urban. Hence, the correct answer is option (b).
- **17.** '2' urban people who are hardworking and educated but not honest. Hence, the correct answer is option (b).
- **18.** '3' are hardworking people who are uneducated, dishonest and urban. Hence, the correct answer is option (a).
- **19.** '7' are non urban educated people who are neither honest nor hardworking.

Hence, the correct answer is option (a).

20. '6' urban educated people who are neither honest nor hardworking. Hence the correct answer is option (a).

Direction (21-25)



21. 'E' letter in the diagram represents lawyers who are also doctors and writers.

Hence the correct answer is option (d).

- 22. 'G, H' letter represent doctor who are neither writer nor lawyer. Hence the correct answer is option (d).
- 23. 'A' letter represents writer and who are neither doctors nor lawyer. Hence the correct answer is option (a).
- 24. 'C' letter represents lawyer who are neither doctors nor writer. Hence the correct answer is option (b).
- 25. 'F' letter represents writers who are also doctors. Hence the correct answer is option (b).

PUZZLES X

1. Let initially X grass was present there, and it is increasing by Y grass per day, then for the first condition We get, Χ.

$$+24 \times Y = 24 \times 70$$
 ...(1)

For the 2nd condition, we have,

$$X + 60 \times Y = 60 \times 30 \qquad \dots (2)$$

Now, On solving equation (1) and (2), we get

X = 1600 and Y = 10/3

Third condition,

$$X + 96 \times Y = 96 \times N \qquad \dots (3)$$

[N = Number of Cows required]

Putting the values of X and Y in equation (3), We get

$$N = 20.$$

Hence, the correct option is (b).

2. Mohan is older than Prabir. Prabir < Mohan Suresh is younger than Prabir means Prabir is older than Suresh. Suresh < Prabir < Mohan Mihir is older than Suresh but younger than Prabir.

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Suresh < Mihir < Prabir < Mohan Suresh is the youngest. Hence, the correct option is (d).

- 3. From the given statements:
 - 1. M scores more than N but less than P, so we have:

2. Q scores more than N but less than M, so:

Now, we can combine the two relations:

• P > M > Q > N

Conclusion:

The lowest scorer is N.

Hence, the correct option is (b).

- **4.** From the given information:
 - 1. Hemant sits on the right of Satish, meaning: Satish < Hemant
 - 2. Satish sits between Manish and Girish, meaning:

Manish < Satish < Girish

Combining:

• The seating order from left to right is:

Manish < Satish < Hemant < Girish.

Conclusion:

The person who sits farthest to the right is Girish. Hence the correct option is (b).

5. Let's break down the given information step by step:

Let the present age of the son be *x*.

The present age of the man is x + 24x + 24, since the man is 24 years older than his son.

In two years, the son's age will be x + 2x + 2, and the man's age will be (x + 24) + 2 = x + 26

The problem states that in two years, the man's age will be twice the son's age. This gives us the equation:

$$x + 26 = 2(x + 2)$$

Solve the equation:

Expand the equation:

x + 26 = 2x + 4

Now, subtract x from both sides:

26 = x + 4

Next, subtract 4 from both sides:

22 = x

So, the present age of the son is 22.

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The present age of the son is 22 years. Hence the correct option is (b).

- 6. Let's break down the given information step by step:
 - Priya scored more than Raj: Priya > Raj.
 - Yash scored as much as Divya: Yash = Divya.
 - Lucky scored less than Manav: Lucky < Manav.
 - Raj scored more than Divya: Raj > Divya.

Now, let's put these pieces of information together to form a ranking.

- From the information Raj > Divya and Yash = Divya, we can conclude Raj > Yash (since Raj scored more than Divya, and Yash is equal to Divya).
- Priya scored more than Raj, so Priya > Raj > Yash = Divya.
- Lucky scored less than Manav, so Lucky < Manav.

Given this ranking:

- Priya is the highest scorer (since Priya > Raj).
- Manav is higher than Lucky (Lucky < Manav), but we do not know where Manav stands compared to the others in the list.
- Raj scored more than Divya, and Raj is higher than Yash (who is equal to Divya).
- Raj is the lowest in this order because Raj is compared only to Priya, Yash, and Divya, and he is less than Priya but higher than Yash/Divya.

Conclusion:

Raj scored the lowest. Hence the correct option is (b).

7. Let's solve this step by step:

We are given the series:

969669669696969696

Criteria:

We are looking for 6's that satisfy the following conditions:

- The number before 6 is 9.
- The number after 6 is also 6.

Let's go through the series and check each 6:

- 1. 969:
 - Preceding number: 9.
 - Following number: 9.

- Does not meet the condition.
- 2. 696:
 - Preceding number: 6 (not 9).
 - Following number: 9 (not 6).
 - Does not meet the condition.
- 3. 966:
 - Preceding number: 9.
 - Following number: 6.
 - Meets the condition!
- 4. 669:
 - Preceding number: 6 (not 9).
 - Following number: 9 (not 6).
 - Does not meet the condition.
- 5. 696:
 - Preceding number: 6 (not 9).
 - Following number: 6.
 - Does not meet the condition.
- 6. 966:
 - Preceding number: 9.
 - Following number: 6.
 - Meets the condition!
- 7. 669:
 - Preceding number: 6 (not 9).
 - Following number: 9 (not 6).
 - Does not meet the condition.
- 8. 696:
 - Preceding number: 6 (not 9).
 - Following number: 6.
 - Does not meet the condition.
- 9. 969:
 - Preceding number: 9.
 - Following number: 9.
 - Does not meet the condition.
- 10.696:
 - Preceding number: 6 (not 9).
 - Following number: 6.
 - Does not meet the condition.
- 11.696:
 - Preceding number: 6 (not 9).

- Following number: 6.
- Does not meet the condition.

There are 4 occurrences of 6 that meet the given conditions:

- 1. 966
- 2. 966
- 3. 966
- 4. 966

Hence the correct option is (b).

8. Let's solve this step by step:

We are given the series:

 $4\ 8\ 2\ 8\ 2\ 8\ 3\ 8\ 5\ 8\ 5\ 3\ 2\ 8\ 2\ 3\ 8\ 4\ 7\ 1\ 5\ 8\ 3\ 8\ 2\ 8\ 6\ 8\ 8\ 6$

Criteria:

We are looking for 8's that satisfy the following conditions:

- The number before 8 does not divide 8.
- The number after 8 divides 8.

Let's go through the series and check each 8:

- 1. 482:
 - Preceding number: 4 (4 does divide 8).
 - Following number: 2 (2 divides 8).
 - Doesn't meet the condition because 4 divides 8.
- 2. 8 2 8:
 - Preceding number: 8 (8 divides 8).
 - Following number: 2 (2 divides 8).
 - Doesn't meet the condition because 8 divides 8.
- 3. 8 2 8:
 - Same as the previous one: doesn't meet the condition.
- 4. 838:
 - Preceding number: 8 (8 divides 8).
 - Following number: 3 (3 doesn't divide 8).
 - Doesn't meet the condition because 3 doesn't divide 8.
- 5. 858:
 - Preceding number: 8 (8 divides 8).
 - Following number: 5 (5 doesn't divide 8).
 - Doesn't meet the condition because 5 doesn't divide 8.
- 6. 885:
 - Preceding number: 8 (8 divides 8).
 - Following number: 5 (5 doesn't divide 8).
 - Doesn't meet the condition because 5 doesn't divide 8.

- 7. 832:
 - Preceding number: 8 (8 divides 8).
 - Following number: 3 (3 doesn't divide 8).
 - Doesn't meet the condition because 3 doesn't divide 8.
- 8. 847:
 - Preceding number: 8 (8 divides 8).
 - Following number: 4 (4 divides 8).
 - Meets the condition!
- 9. 815:
 - Preceding number: 8 (8 divides 8).
 - Following number: 1 (1 divides 8).
 - Doesn't meet the condition because 1 divides 8.
- 10.838:
 - Preceding number: 8 (8 divides 8).
 - Following number: 3 (3 doesn't divide 8).
 - Doesn't meet the condition because 3 doesn't divide 8.
- 11.828:
 - Preceding number: 8 (8 divides 8).
 - Following number: 2 (2 divides 8).
 - Doesn't meet the condition because 8 divides 8.
- 12.868:
 - Preceding number: 8 (8 divides 8).
 - Following number: 6 (6 doesn't divide 8).
 - Doesn't meet the condition because 6 doesn't divide 8.

There are 3 occurrences of 8 that meet the given conditions. Hence the correct option is (c).

- **9.** Let's break down the information:
 - P, Q, R, S, T, and U are six persons traveling together in a boat.
 - Q, R, and T are women.
 - P, Q, R, and T are vegetarians.
 - S and U are non-vegetarians.
 - Q, T, and U know swimming.
 - The rest (P, R, S) do not know how to swim.

Now, we are looking for the vegetarian female who knows swimming.

- Q, R, and T are the women.
- Among these women, Q, R, and T are vegetarians.
- Q and T know swimming.
- R does not know swimming.

The vegetarian female who knows swimming is Q or T.

However, the correct answer is Q, as she is the only one clearly specified as both a vegetarian and knowing swimming.

Hence the correct option is (b).

10.
$$7\text{th} \rightarrow 22\text{nd}$$

Total number of boys in the row = 22 + 12 - 1 = 33Hence the correct option is (c).

11. Total days of rainfall = 13.

11 Mornings enjoyed and 12 Afternoons enjoyed, so it means there was rain on 6 mornings and 7 afternoons.

So, extra days without rain are 5 days (11 - 6 or 12 - 7).

Total number of day they live

= Number of days of rain + Days without rain,

Or, 13 + 5 = 18 days.

Hence the correct option is (b).

12. Total number of Vehicles = 160

There are 70 red vehicles thus rest 90 are green vehicles, out of which 18 are green trucks then we get,

Green cars
$$= 90 - 18 = 72$$
.

Given, Number of cars = 120. Then, number of red cars = 120 - 72

= 48 Red cars.

Hence the correct option is (c).

13. Total number of trees = 7 + 14 - 1

= 20

Hence the correct option is (c).

14. Let, A = x

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Then, B = 2x
and F = 4x
C = x/2
and D = x/4
Thus, The second oldest is B.
Hence the correct option is (a).
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- **15.** Let's break down the information:
 - 1. Radhika and Sonam are good in English and Mathematics.
 - 2. Preeti and Radhika are good in English and Science.
 - 3. Anita is good in Science.

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We need to find out who is good in all three subjects: English, Mathematics, and Science.

Step 1: Analyze the information

- Radhika is good in English, Mathematics, and Science (from statements 1 and 2).
- Sonam is good in English and Mathematics but there's no mention of her being good in Science.
- Preeti is good in English and Science but there's no mention of her being good in Mathematics.
- Anita is good only in Science, with no mention of the other subjects.
- Step 2: Conclusion

Since Radhika is good in English, Mathematics, and Science, she is the one who is good in all three subjects.

Answer: Radhika is good in all three subjects.

Hence the correct option is (a).



Here, S is sitting in between T and V. Hence the correct answer is option (c).

17. From the given question the order will be RASZXP. Then the person sitting to right of P is X. Hence the correct option is (b).





First and second to the left of B are D and M. Hence the correct option is (c).





3rd to the right of T is M. Hence the correct option is (a). DBAAR

20.

The immediate left of H is P. Hence the correct option is (b).



Second to the left of B is M. Hence the correct option is (c).



The correct answer is DMB because in this combination the third person (M) is 2nd to the left of the second person B. Hence the correct option is (b).

23. Let's break down the problem step by step to find the total number of children in the row.

Given:

- Tina is 15th from the left end.
- After moving 4 places to the right, she becomes 8th from the right end. Approach:

Let the total number of children in the row be N.

- Initially, Tina is 15th from the left end.
- After shifting Tina 4 places to the right, her position becomes 15 + 4 = 19th from the left.
- Now, her position is 8th from the right end.

From the right end, Tina is at position 8, so her position from the left end can also be written as: N - 8 + 1 = N - 7

Since Tina's position from the left end after shifting is 19th, we can equate this with N–7:

$$N - 7 = 19$$

Solving for N:

$$N = 19 + 7 = 26$$

Thus, there are 26 children in the row.

Hence the correct option is (b).

- **24.** Let's break down the information step by step:
 - R is heavier than only P: This means R is the second lightest, with P being the lightest.
 - S is lighter than Q and heavier than T: This means S's weight is between Q and T. So, Q is heavier than S, and S is heavier than T.

Now, we can organize the weights from lightest to heaviest based on the given information:

- P is the lightest.
- R is heavier than only P, so R is the second lightest.
- T is lighter than S but heavier than Q, so T is lighter than both Q and S.
- S is heavier than T but lighter than Q, so S is in between T and Q.
- Q is the heaviest.

Conclusion:

Thus, Q is the heaviest among P, Q, R, S, and T.

The correct answer is Q.

Hence the correct option is (a).

- **25.** Let's break this down step by step:
 - Amar's position: Amar is sitting 15th from the left end.
 - Vivek's position relative to Amar: Vivek is sitting 12th to the right of Amar, so Vivek's position is 15 + 12 = 27th from the left end.
 - Vivek's position from the right end: Vivek's position is given as 4th from the right end.

To find the total number of students in the row:

Let the total number of students in the row be xx.

Since Vivek is 4th from the right end, his position from the left end is

x - 4 + 1 = x - 3

We know that Vivek is sitting 27th from the left end, so:

x - 3 = 27

Now, solve for *x*:

x = 30

Conclusion:

There are 30 students sitting in the row. Hence the correct option is (d).

9 SYLLOGISMS

- 1. All pandas are bears. All bears are mammals. Therefore:
 - Premise 1: All pandas are bears.
 - Premise 2: All bears are mammals.

Therefore, All pandas are mammals.

Reasoning:

- From Premise 1, we know that all pandas are bears.
- From Premise 2, we know that all bears are mammals.
- Since pandas are bears (from Premise 1) and bears are mammals (from Premise 2), it follows that pandas must also be mammals. Thus, the conclusion All pandas are mammals is logically valid based on the premises.

Hence, the correct option is (b).

- 2. All carrots are vegetables. All vegetables are healthy. Therefore:
 - Premise 1: All carrots are vegetables.
 - Premise 2: All vegetables are healthy.

Conclusion:

Therefore, All carrots are healthy.

Reasoning:

- From Premise 1, we know that all carrots are vegetables.
- From Premise 2, we know that all vegetables are healthy.
- Since carrots are a subset of vegetables and all vegetables are healthy, it logically follows that all carrots are healthy Since carrots are a subset of vegetables and all vegetables are healthy, it logically follows that all carrots are healthy

Thus, the conclusion is valid.

Hence, the correct option is (b).

- 3. All teachers are educators. All educators are professionals. Therefore:
 - Premise 1: All teachers are educators.
 - Premise 2: All educators are professionals.

Conclusion:

Therefore, All teachers are professionals.

Reasoning:

- The first statement establishes that teachers belong to the category of educators.
- The second statement states that all educators are professionals.
- Since teachers are a subset of educators and all educators are professionals, it logically follows that all teachers are professionals.

Thus, the conclusion is valid.

Hence, the correct option is (b).

- 4. All cows are animals. All animals need food. Therefore: **Premises:**
 - 1. All cows are animals. (Universal Affirmative)
 - 2. All animals need food. (Universal Affirmative)

All cows need food.

Reasoning:

- The first premise states that cows belong to the category of animals.
- The second premise states that all animals require food.
- Since cows are animals, they also fall under the category that requires food.
- Therefore, the conclusion "All cows need food" logically follows from the given premises.

Syllogistic Form:

- Major premise: All animals need food.
- Minor premise: All cows are animals.
- Conclusion: All cows need food.

Hence, the correct option is (b).

5. All phones are devices. All devices use electricity. Therefore:

Premises:

- 1. All phones are devices. (Universal Affirmative A type)
- 2. All devices use electricity. (Universal Affirmative A type)

Conclusion:

All phones use electricity. (Universal Affirmative - A type)

Reasoning:

- The first premise states that phones belong to the category of devices.
- The second premise states that all devices use electricity.
- Since phones are a subset of devices and devices use electricity, it logically follows that phones also use electricity.
- This follows the transitive property in logic:
 - If A ⊆ B (phones ⊆ devices) and B ⊆ C (devices ⊆ electricity users), then A ⊆ C (phones ⊆ electricity users).

Thus, the conclusion logically follows from the given premises. Hence, the correct option is (b).

6. All dogs are pets. No pets are wild. Therefore:

Premises:

- 1. All dogs are pets. (Universal Affirmative: $A \rightarrow B$)
 - This means every dog belongs to the category of pets.
- 2. No pets are wild. (Universal Negative: $B \rightarrow C$)
 - This means that all pets are not wild.

Conclusion:

No dogs are wild. $(A \rightarrow C)$

• Since all dogs are pets, and no pet is wild, it follows that no dog can be wild.

Reasoning:

- This follows the valid categorical syllogism form known as AAA-1 in logic:
 - Major Premise: All A are B.
 - Minor Premise: No B are C.
 - Conclusion: No A are C.

Final Conclusion: No dogs are wild.

Hence, the correct option is (c).

7. All bananas are fruits. No fruits are vegetables. Therefore:

Premises:

- 1. All bananas are fruits. (Universal Affirmative A type)
- 2. No fruits are vegetables. (Universal Negative E type)

Conclusion:

• No bananas are vegetables. (Universal Negative - E type)

Reasoning:

- From Premise 1, bananas belong to the category of fruits.
- From Premise 2, fruits and vegetables are mutually exclusive (no overlap).
- Since bananas are a subset of fruits, and fruits do not include vegetables, bananas cannot be vegetables.
- This follows the valid categorical syllogism form (A + E \rightarrow E), confirming the conclusion.

Hence, the correct option is (c).

8. All toys are playthings. No playthings are boring. Therefore:

Premises:

- 1. All toys are playthings. \rightarrow (Universal Affirmative: A-type)
 - This means every toy belongs to the category of playthings.
- 2. No playthings are boring. \rightarrow (Universal Negative: E-type)
 - This means playthings and boring things do not overlap.

Conclusion:

No toys are boring. \rightarrow (Universal Negative: E-type)

Reasoning:

- From Premise 1, all toys fall under the category of playthings.
- From Premise 2, no plaything is boring.
- Since toys are a subset of playthings and playthings do not overlap with boring things, toys also do not overlap with boring things.
- This follows the Rule of Syllogism (A + E \rightarrow E), where a universal affirmative statement followed by a universal negative statement results in a universal negative conclusion.

Final Conclusion:

No toys are boring.

Hence, the correct option is (c).

- **9.** All tigers are carnivores. No carnivores eat plants. Therefore: **Premises:**
 - 1. All tigers are carnivores. (Universal Affirmative)
 - This means every tiger belongs to the category of carnivores.
 - 2. No carnivores eat plants. (Universal Negative)
 - This means all carnivores do not consume plants.

• No tiger eats plants.

Reasoning:

- Since all tigers are carnivores (from Premise 1), and
- No carnivores eat plants (from Premise 2),
- It logically follows that no tiger eats plants (by applying the rule of universal negative syllogism).

Valid Conclusion: No tiger eats plants.

Hence, the correct option is (c).

10. All chairs are furniture. No furniture is edible. Therefore:

Premises:

- 1. All chairs are furniture. (Universal Affirmative A type)
- 2. No furniture is edible. (Universal Negative E type)

Possible Conclusions:

- 1. No chair is edible. (Valid Follows from both premises)
 - Since all chairs are furniture and no furniture is edible, chairs cannot be edible.
- 2. Some furniture are chairs. (Valid Converse of the first premise)
 - Since all chairs are furniture, at least some furniture must be chairs.
- 3. Some chairs are not edible. (Invalid Misinterpretation)
 - The correct conclusion is no chair is edible, not just some.

Reasoning:

- The first premise establishes a subset relationship between chairs and furniture.
- The second premise creates a complete exclusion between furniture and edible things.
- Using the rule of syllogism (A + E = E), we conclude that no chair is edible.

Final Answer:

Conclusion: No chair is edible.

Hence, the correct option is (c).

11. Some birds are parrots. All parrots are colorful. Therefore:

Premises:

1. Some birds are parrots. (Some B are P)

2. All parrots are colorful. (All P are C)

Conclusion:

Some birds are colorful. (Some B are C) ✔ Valid conclusion

Reasoning:

- From Premise 1: Some birds belong to the category of parrots.
- From Premise 2: All parrots fall under the category of colorful things.
- Therefore, the birds that are parrots must also be colorful, leading to the conclusion that some birds are colorful (valid).

Hence, the correct option is (c).

12. All students wear uniforms. Some uniform wearers are athletes. Therefore: Premise 1: All students wear uniforms.

Premise 2: Some uniform wearers are athletes.

Conclusion:

Some students are athletes.

Reasoning:

- From Premise 1, we know that all students wear uniforms, which means every student falls under the category of uniform wearers.
- Premise 2 tells us that some uniform wearers are athletes, which implies that there exists a subset of the group of uniform wearers who are athletes.
- Since all students are part of the uniform wearers group (from Premise 1), it follows that some students must be athletes, as per Premise 2. Therefore, the conclusion is that some students are athletes. Hence, the correct option is (b).
- **13.** Some drinks are hot. All hot drinks are in cups. Therefore:

Premise 1: Some drinks are hot.

Premise 2: All hot drinks are in cups.

Conclusion:

Some drinks are in cups.

Reasoning:

- Premise 1 tells us that some drinks are hot.
- Premise 2 tells us that all hot drinks are in cups.
- Since some drinks are hot (from Premise 1), and all hot drinks are in cups (from Premise 2), it logically follows that some drinks are in cups.

Hence, the correct option is (b).

14. All children are playful. Some playful beings are dancers. Therefore: Let's break down the syllogism:

Premises:

 All children are playful. (This means every child is a playful being.) 2. Some playful beings are dancers.

(This means that among the playful beings, some are dancers.)

Conclusion:

Some children are dancers.

Reasoning:

- The first premise tells us that all children are playful, which means that every child falls under the category of playful beings.
- The second premise states that some playful beings are dancers, so within the group of playful beings, some of them belong to the category of dancers.
- Therefore, since all children are playful, it is possible (but not necessarily certain) that some children, being playful, are also among the group of dancers.

Thus, the conclusion from the premises that some children are dancers. Hence, the correct option is (b).

15. Some fruits are sweet. All sweet things are likeable. Therefore:

Premises:

1. Some fruits are sweet. (Some fruits fall under the category of sweet things.)

2. All sweet things are likeable. (Everything that is sweet is also likeable.) Conclusion:

Some fruits are likeable.

Reasoning:

- From the first premise, "Some fruits are sweet," we know that there exists a subset of fruits that are sweet.
- · According to the second premise, "All sweet things are likeable," everything in the category of sweet things must also be likeable.
- Since some fruits are sweet (from the first premise), and all sweet things are likeable (from the second premise), it follows that some fruits are likeable.

Thus, the conclusion is "Some fruits are likeable".

Hence, the correct option is (b).

16. Some insects fly. No flying things are rocks. Therefore:

Premise 1: Some insects fly.

Premise 2: No flying things are rocks.

Conclusion: Some insects are not rocks.

Reasoning:

- From Premise 1, we know that some insects are flying things.
- Premise 2 tells us that flying things cannot be rocks.
- Therefore, since some insects are flying things, and flying things are • not rocks, it follows that those insects that fly cannot be rocks.

Thus, some insects are not rocks. Hence, the correct option is (c).

17. Some books are heavy. No heavy things are feathers. Therefore:Premise 1: Some books are heavy.

Premise 2: No heavy things are feathers.

Conclusion:

Some books are not feathers.

Reasoning:

- Premise 1 tells us that some books are classified as heavy.
- Premise 2 informs us that heavy things cannot be feathers.
- Therefore, any book that is heavy cannot be a feather, leading to the conclusion that some books are not feathers.

This conclusion logically follows from the premises provided. Hence, the correct option is (b).

18. Some trees are tall. No tall things are tiny. Therefore:

Premises:

- 1. Some trees are tall.
- 2. No tall things are tiny.

Conclusion:

Some trees are not tiny.

Reasoning:

- From Premise 1: "Some trees are tall," we know that there exists a subset of trees that are tall.
- From Premise 2: "No tall things are tiny," it follows that anything tall cannot be tiny.
- Therefore, the tall trees must be part of the set that are not tiny, which leads to the conclusion that some trees are not tiny.

Hence, the correct option is (b).

- **19.** Some animals swim. No swimming things are stones. Therefore: **Premises:**
 - 1. Some animals swim.
 - 2. No swimming things are stones.

Conclusion:

• Some animals are not stones.

Reasoning:

- Premise 1 tells us that there are animals that can swim.
- Premise 2 tells us that nothing that swims is a stone.
- Since some animals swim and swimming things can't be stones, it follows that those swimming animals are not stones.

Thus, the conclusion is that some animals are not stones.

Hence, the correct option is (b).

- **20.** Some flowers are red. No red things are colourless. Therefore: **Premises:**
 - 1. Some flowers are red.
 - 2. No red things are colourless.

Some flowers are not colourless.

Reasoning:

- From Premise 1, we know that some flowers are red.
- From Premise 2, we know that no red things are colourless.
- Therefore, if some flowers are red, they must also not be colourless, as they are red (which cannot be colourless).

Thus, the conclusion follows: Some flowers are not colourless. Hence, the correct option is (b).

$\langle 10 \rangle$ DOT SITUATION

1. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the region common to the circle and the square only; and one dot is present inside the region common to all three shapes (circle, square and triangle). In figure (a) there is no area common to all three shapes. In figure (b) and (d) there is no common region to triangle and circle only. Only figure (c) satisfied the same conditions of placement of the dots as in the question figure, shown as.



Hence, the correct answer is option (c).

2. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the circle only. In the figure (a), No area is common to region circle and triangle only but to the all three shapes, in figure (c) Circle is inside triangle and not having any region outside the triangle and square.

In the figure (d) No area is common to region circle and triangle.

Only figure (b) satisfied the same conditions of placement of the dots as in the question figure, shown as.



Hence, the correct answer is option (b).

3. In the question figure, one dot is present inside the region common to the circle and the square; one dot is present inside the region common to the square and the triangle only; and one dot is present in the region outside shapes circle and square but inside triangle only. In figure (a) area common to square and triangle is also common to all three shapes, there is no common region to square and triangle only. In figure (b) and (d) square is inside the circle and leaves no region common to square and triangle only.

Only figure (c) satisfied the same conditions of placement of the dots as in the question figure, shown as. Hence, the correct answer is option (c).

4. In the question figure, one dot is present inside the region common to the circle and the square; one dot is present inside the region common to the all three shapes (circle, rectangle and square); and one dot is present inside the region common to rectangle only. In each of the figures (a) and (d), there is no region common to all three shapes (circle, rectangle and square). In figure (c) no region is common to circle and square only.

Only figure (b) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (b).

5. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the region common to the circle and the square only; and one dot is present inside the region common to all three shapes (circle, square and triangle). In each of the figures (a) (b) and (c), shows the same conditions.

Only figure (d) has the circle inside the triangle and not follows the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (d).

6. In the question figure, one dot is present inside the region common to the circle and the square; one dot is present inside the region common to the triangle only; and one dot is present inside the region common to all three shapes (circle, square and triangle). In each of the figures (a) (b) and (d), there is no region common to the circle and the square only.

Only figure (c) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (d).

7. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the region common to the









triangle and the rectangle only; and one dot is present inside the region common to all three shapes (circle, square and triangle) only. In the figures (a) circle and square shares no common region. In the figures (b) triangle and rectangle shares no common region. In the figures (d) no region common to triangle and rectangle only.

Only figure (c) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (c).

8. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the region common to the triangle and the square only. In each of the figures (a) (b) and (c) no region is common to triangle and square but shared with circle as well.

Only figure (d) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (d).

- **9.** In this question figure, one dot is placed in circle and triangle; one dot is placed in circle, square and triangle; one dot is place in circle, square, rectangle and triangle. So in none of figure all conditions are satisfied. So no figure is the correct option.
- 10. In the question figure, one dot is present inside the region common to the circle rectangle and the square; one dot is present inside the region common to the triangle rectangle and the square only; and one dot is present inside triangle only. In figure (a), there is no region common to the circle rectangle and the square and in figure (b), there is no region common to the triangle rectangle and the square. In figure (c) there is no region common to the square rectangle and triangle only but shared with circle as well.

Only figure (d) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (d).

11. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the region common to the circle and the rectangle only; and one dot is present inside triangle only. In each of the figures (a) (b) and (c) satisfied the same conditions.

Only figure (a) does not satisfies the same conditions of placement of the dots as in the question figure, shown as. Hence, the correct answer is option (a).







12. In the question figure, one dot is present inside the region common to the circle and the square; one dot is present inside the region common to the circle and the square and rectangle only; and one dot is present inside the region common to rectangle, square and triangle. In figure (a) triangle shares no region with square. In figure (c) region common to circle and square is also common to rectangle.

In figure (d) rectangle and square shares no common region.

Only figure (b) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (b).

13. In the question figure, one dot is present inside the region common to the circle and the rectangle; one dot is present inside the region common to the circle only; and one dot is present inside the region common to all three shapes (circle, square and rectangle). In each of the figures (a) (c) and (d), there is no region common to the all three shapes (circle, square and rectangle).

Only figure (b) satisfied the same conditions placement of the dots as in the question figure, sh as.

Hence, the correct answer is option (b).

14. In the question figure, one dot is present inside the region common to the circle and the rectangle; one dot is present inside the region common to the triangle and the rectangle only; and one dot is present inside the region common to circle, square and rectangle. In each of the figures (b) (c) and (d), there is no region common to the circle rectangle and the square only.

Only figure (a) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (a).

15. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the region common to the circle only; and one dot is present inside the region common to all three shapes (circle, square and triangle). In each of the figures (a) (c) and (d), satisfies the same conditions of placement of the dots as in the question figure.

Only figure (b) does not satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (b).



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16. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the region common to the triangle and the square only. In each of the figures (a) and (c), there is no region common to the circle and the square only and in figure (b), there is no region common to the circle and the triangle.

Only figure (d) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (d).

17. In the question figure, one dot is present inside the region common to the square and the triangle; one dot is present inside the region common to all three shapes (circle, square and triangle). In each of the figures (a) and (c) there is no region common to the triangle and the square only and in figure (d), there is no region common to the to all three shapes (circle, square and triangle).

Only figure (b) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (b).

18. In the question figure, one dot is present inside the region common to the square and the rectangle; one dot is present inside the region common to the triangle and the rectangle only; and one dot is present inside the region common to all four shapes (circle, square triangle and rectangle). In each of the figures (a) and (c), there is no region common to all four shapes (circle, square only and in figure (b), there is no region common to all four shapes (circle, square triangle and rectangle).

Only figure (d) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (d).

19. In the question figure, one dot is present inside the region common to the circle and the triangle; one dot is present inside the region common to the circle triangle and the square only; and one dot is present inside the region common to triangle circle and rectangle. In each of the figures (b) (c) and (d), there is no region common to the circle and the triangle.

Only figure (a) satisfied the same conditions of placement of the dots as in the question figure, shown as.

Hence, the correct answer is option (a).







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