

TEST OF REASONING & MENTAL ABILITY - NO.1

Time : 30 minutes

Marks : 100

1. Find out the next number in the series?
3, 4, 8, 17, 33, 58,?
A. 116 B. 114 C. 110 D. 94 E. None of these
2. A number exceeds its four seventh by 18. What is the number?
A. 36 B. 49 C. 32.5 D. 42 E. None of these
3. In a certain code language, the word 'CONTEST' is written as FSQWIVW. How will the word BLASTER be written in that language?
A. EOEVWHU B. EOEWVHU C. EOEVWIU D. DOEVWIU E. None of these
4. If the first half of the English alphabet is reversed and so is the second half, then which letter is the ninth to the left of the seventeenth letter from the left side?
A. H B. F C. E D. G E. None of these
5. $38 : 66 :: 52 : \underline{\hspace{2cm}}$
A. 70 B. 89 C. 94 D. 110 E. 96
6. In a certain code, we got
 $4 * 8 = 16$, $5 * 4 = 10$, $7 * 6 = 21$. Then, what will be the value of $4 * 9$?
A. 14 B. 18 C. 16 D. 21 E. None of these
7. $7^5 \div 7^3 \div 7^2 \times 7^4 \times \frac{1}{7^3} = 7^?$
A. 1 B. 2 C. 0 D. 3 E. None of these
8. How many 9's are there in the following sequence. Which are immediately preceded by 3 but not immediately followed by 4?
2 3 9 5 1 3 9 6 7 3 9 4 8 9 3 4 9 3 2 3 9 8 3 9 3
A. 3 B. 2 C. 1 D. 4 E. None of these
9. Book is related to library in the same way as flower is related to
A. Petal B. Stalk C. Garland D. Decoration E. None of these
10. The number, which replaces the question mark in $\sqrt{\frac{144}{?}} = \frac{36}{21}$ is
A. 7 B. 84 C. 14 D. 21 E. None of these
11. A sum is divided among four persons in the ratio 3 : 4 : 5 : 8. If the second largest share is Rs. 2500, what is the total sum?
A. Rs.10,000 B. Rs.12,500 C. Rs.5,000 D. Cannot be determined
E. None of these

12. If '+' means '-', '-' means 'x', 'x' means '÷' and '÷' means '+', then
 $15 \times 3 \div 15 + 5 - 2 = ?$
 A. 0 B. 10 C. 20 D. 6 E. None of these
13. In a certain code, SOVIET is 123456 and CHIHA is 78490. Then, how SIACHIN can be coded
 A. 1407849 B. 1408749 C. 1490478 D. 1470489 E. None of these
14. If 'dust' is called 'air', 'air' is called 'white', 'white' is called 'yellow', 'yellow' is called 'water' and 'water' is called 'red', then where do the birds fly in?
 A. Yellow B. White C. Air D. Water E. Green
15. 'Ship' is related to 'water' in the same way as 'train' is related to
 A. Passenger B. Path C. Track D. Road E. Steam
16. The ratio of the ages of father and son at present is 6 : 1. After 5 years, the ratio will become 7 : 2. What is the present age of son?
 A. 6 years B. 7 years C. 8 years D. 5 years E. None of these
17. Pointing to a man, Veena said "His sister is my daughter's brother's mother". How is the man related to Veena?
 A. Brother B. Father C. Uncle D. Grandfather E. Cousin
18. If m and n are whole numbers such that $m^n = 121$, find the value of $(m - 1)^{n+1}$?
 A. 10000 B. 9999 C. 1000 D. 100000 E. None of these
19. $\sqrt{221^2 - 220^2} = ?$
 A. 20 B. 23 C. 24 D. 21 E. None of these
20. Poison is related to Socrates in the same way as crucification is related to _____?
 A. Jesus B. Christians C. Aristotle D. Church E. None of these
21. A positive number when decreased by 4 is equal to 21 times the reciprocal of the number. Find the number?
 A. 2 B. 3 C. 5 D. 7 E. None of these
22. Which one is odd from the others?
 A. Bigger B. Faster C. Greater D. Larger E. None of these
23. A girl buys apples at Rs. 2 for 3 apples and sells them at one rupee each. To make a profit of Rs.10, she must sell how many apples?
 A. 27 B. 20 C. 30 D. 34 E. None of these
24. Subtracting 40% of a number from the number, we get the result as 30. Find the number?
 A. 20 B. 30 C. 50 D. 70 E.. None of these
25. If $5^a = 3125$, find the value of 5^{a-3} ?
 A. 25 B. 36 C. 30 D. 100 E.. None of these

ANSWER WITH EXPLANATION

1. D. $3+1^2=4, 4+2^2=8, 8+3^2=17, 17+4^2=33, 33+5^2=58, 58+6^2=94$

2. D. Let the number be x

$$x - \frac{4}{7}x = 18$$

ie, x = 42

3. C. Here coding has been done in a very simple way. Every consonant is replaced by a letter three places toward and every vowel is replaced by a letter four places forward

<i>C</i>	<i>O</i>	<i>N</i>	<i>T</i>	<i>E</i>	<i>S</i>	<i>T</i>		<i>B</i>	<i>L</i>	<i>A</i>	<i>S</i>	<i>T</i>	<i>E</i>	<i>R</i>
↓+3	↓+4	↓+3	↓+3	↓+4	↓+3	↓+3	∴	↓+3	↓+3	↓+4	↓+3	↓+3	↓+4	↓+3
<i>F</i>	<i>S</i>	<i>Q</i>	<i>W</i>	<i>I</i>	<i>V</i>	<i>W</i>		<i>E</i>	<i>O</i>	<i>E</i>	<i>V</i>	<i>W</i>	<i>I</i>	<i>U</i>

4. B. After the rearrangement, we get the new sequence of the letters as follows.

M L K J I H G (F) E D C B A X Y Z W V U T S R Q P O N

Now, 9th to the left of the 17th from the left = 17 - 9

= 8th from the left.

ie, F

5. C. $38 \times 2 - 10 = 66$

Similarly $52 \times 2 - 10 = 94$

6. B. Here, $4 * 8 = \frac{4 \times 8}{2} = 16$

$$5 * 4 = \frac{5 \times 4}{2} = 10$$

Similarly, $4 * 9 = \frac{4 \times 9}{2} = 18$

7. A. $\frac{7^5}{7^3 \times 7^2} \times 7^4 \times 7^{-3}$

$$\therefore a^m \times a^n = a^{m+n}$$

$$= \frac{7^5 \times 7^1}{7^5} = 7^1$$

$$\frac{1}{7^x} = 7^{-x}$$

8. D. 2 3 9 5 1 3 9 6 7 3 9 4 8 9 3 4 9 3 2 3 9 8 3 9 3

9. C.

10. E. Suppose $\sqrt{\frac{144}{x}} = \frac{36}{21}$

ie, $\frac{144}{x} = \frac{36 \times 36}{21 \times 21}$

$$\Rightarrow x = \frac{144 \times 21 \times 21}{36 \times 36} = 49$$

11. A. Let Rs. x be the total Sum

$$\therefore \frac{5X}{20} = 2500 \quad X = \underline{\underline{10000}}$$

12. B. $15 \div 3 + 15 - 5 \times 2$ (When 4 binary operations appear in a problem, use BODMAS rule)

$$\Rightarrow 5 + 15 - 10 = \underline{\underline{10}}$$

13. A.

S	O	V	I	E	T
1	2	3	4	5	6

C	H	I	N	A
7	8	4	9	0

 $\therefore \text{SIACHIN} = 1407849$

14. B.

15. C.

16. D. Let the ages of father and son be $6x$ and x years respectively.

$$\text{Then } \frac{6x+5}{x+5} = \frac{7}{2}$$

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

$$\therefore \text{Present age of son} = 5 \text{ years}$$

17. A. Veena's daughter's brother's mother is Veena herself.
Man's sister is Veena herself
 \therefore Man is the brother of Veena.

18. C. $m^n = 121$
 $= 11^2$
 $m^n = 11^2 \Rightarrow m = 11 \text{ and } n = 2$

$$\left(\frac{2x-5}{3}\right)^{n+1} = (11-1)^3 = \underline{\underline{1000}}$$

19. D. Given expression is $\sqrt{a^2 - b^2}$

$$\text{ie, } \sqrt{a^2 - b^2} = \sqrt{(a+b)(a-b)} = \sqrt{(221+220)(221-220)} = \sqrt{441 \times 1} = \sqrt{441} = \underline{\underline{21}}$$

20. A.

21. D. Let the number be x

$$\text{Then } x - 4 = \frac{21}{x}, \quad x^2 - 4x - 21 = 0 \Rightarrow (x-7)(x+3) = 0$$

$$\Rightarrow \text{The positive number is } 7$$

22. B.

23. C. Suppose she sells 'x' apples.

C.P. of x apples Rs

S.P. of x apples = x Rs.

$$\text{Profit on } x \text{ apples} = x - \frac{2}{3}x = \underline{\underline{\frac{x}{3}}}$$

$$\therefore \frac{x}{3} = 10 \quad \Rightarrow x = \underline{\underline{30}}$$

24. C. Let the number be 'x'

$$x - \frac{40}{100}x = 30$$

$$\text{ie, } x\left(1 - \frac{2}{5}\right) = 30 \quad \therefore x = \frac{30 \times 5}{3} = \underline{\underline{50}}$$

25. A. $5^a = 3125$

$$\Rightarrow 5^a = 5^5$$

$$\Rightarrow a = \underline{\underline{5}} \quad \left[a^m = a^n \Rightarrow m = n \right]$$

$$\therefore 5^{a-3} = 5^{5-3} = \underline{\underline{25}}$$