

PRACTICE TEST OF TOP RANK

TEST OF REASONING & MENTAL ABILITY - NO.11

Time : 30 minutes

Marks : 100

1. Flower is related to petal in the same way as Book is related to _____
 A. Page B. Content C. Author D. Library E. Catalogue
2. Two numbers are in the ratio 5 : 6 and if 4 is subtracted from each, they are reduced to the ratio 4 : 5. Find the smaller number ?
 A. 15 B. 20 C. 25 D. 30 E. None of these
3. When 75% of a number is added to 75, the result is the number again. Find the number ?
 A. 200 B. 100 C. 300 D. 400 E. None of these
4. Find the wrong number in the below series.
 0, 7, 26, 63, 126, 215, 342
 A. 126 B. 63 C. 26 D. 7 E. None of these
5. A man will be three times old in 20 years as he is now. What is his present age ?
 A. 4 years B. 6 years C. 10 years D. 12 years E. None of these
6. The value of $1502^2 - 1498^2$
 A. 12,000 B. 25,560 C. 15,610 D. 23,540 E. None of these
7. If the 25th of August in a year is Thursday, the number of Mondays in that month is
 A. 3 B. 4 C. 5 D. 6 E. None of these
8. If L stands for +, M stands for −, N stands for ×, P stands for ÷, then
 $14 \text{ N } 10 \text{ L } 42 \text{ P } 2 \text{ M } 8 = ?$
 A. 153 B. 216 C. 248 D. 251 E. None of these
9. A girls leaves from her home. She first walks 30 metres in North-west direction and then 30 metres in South-West direction. Next she walks 30 metres in South-east direction. Finally, she turns towards her house. In which direction is she moving ?
 A. North - East B. North-West C. South-East D. South-West E. None of these
10. Choose the odd Numerical pair
 A. 3 - 5 B. 5 - 3 C. 6 - 2 D. 7 - 3 E. None of these
11. Choose the odd one
 A. Tomato B. Cucumber C. Peas D. Cabbage E. Potato
12. If NARGRUED is the code for GRANDEUR, which word is coded as SERPEVRE ?
 A. PERSEVER B. PRESEVER C. PREVERSE D. PERSERVE E. PRESERVE
13. $a + b + c = 13$, $a^2 + b^2 + c^2 = 69$, Then find $ab + bc + ca$?
 A. -50 B. 50 C. 69 D. 75 E. None of these
14. $(-5)(4)(2) \left(\frac{-1}{2} \right) \left(\frac{3}{4} \right) = ?$
 A. -30 B. -15 C. 15 D. 30 E. None of these
15. Which number can replace both the question marks in the equation,

$$\frac{4\frac{1}{2}}{?} = \frac{?}{32}$$

 A. 1 B. 7 C. $7\frac{1}{2}$ D. 12 E. None of these

16. When $9 - 3 = 819$, $7 - 6 = 499$, $6 - 5 = 369$, then $12 - 8 = ?$
 a. 1449 B. 819 C. 243 D. 2105 E. 345
17. How many 8's are there in the following sequence, which are preceded by 5 but not immediately followed by 3 ?
 5 8 3 7 5 8 6 3 8 5 4 5 8 4 7 6 5 5 8 3 5 8 7 5 5 8 2 8 5
 A. 0 B. 1 C. 2 D. 3 E. 4
18. A side of a cube is $\sqrt{3}$. The maximum length of a stick it can contain is,
 A. $\sqrt{3}$ B. $3\sqrt{3}$ C. 3 D. 3^2 E. Cannot say
19. If $a^x = b$, $b^y = C$, $c^z = a$ then xyz is equal to
 A. 0 B. 1 C. -1 D. $a + b + c$ E. abc
20. If a rectangle were a circle, a circle were a point, a point a triangle and a triangle were a square, the shape of the wheel is,
 A. Circle B. Rectangle C. Point D. Triangle E. Square
21. If $2 = 5$, $4 = 18$, $6 = 39$, $8 = 68$, then $10 = ?$
 A. 45 B. 105 C. 81 D. 95 E. 15
22. Pointing towards a person, a man said to a woman, "His mother is the only daughter of your father". How is the woman related to that person ?
 A. Daughter B. Sister C. Mother D. Wife E. None of these
23. If $1.125 \times 10^k = 0.001125$, then the value of k is :
 A. -4 B. -3 C. -2 D. -1 E. None of these
24. $0.213 \div 0.00213 = ?$
 A. 1 B. 10 C. 100 D. None of these
 E. Cannot be determined
25. When $12 + 10 = 1205$, $11 + 8 = 885$ then $14 + 15 = ?$
 A. 1005 B. 120 C. 7 D. 2105 E. None of these

A
ANSWER WITH EXPLANATION

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1. A Number of petals constitute a flower. Similarly number of pages constitute a book.
2. B Let the two numbers be $5x$ and $6x$.

$$\therefore \frac{5x-4}{6x-4} = \frac{4}{5}$$

$$25x - 20 = 24x - 16$$

$$\Rightarrow \underline{\underline{x = 4}}$$

$$\therefore \text{Smaller number} = 5 \times 4 = \underline{\underline{20}}$$
3. C Let the number be x

$$\therefore 75\% \text{ of } x + 75 = x$$

$$75 + \frac{3}{4}x = x$$

$$\Rightarrow 75 = x - \frac{3}{4}x = \frac{x}{4}$$

$$\Rightarrow \underline{\underline{x = 300}}$$
4. A The series goes on as $1^3 - 1$, $2^3 - 1$, $3^3 - 1$ and so on. Hence 126 must be replaced by 124
5. C Let 'x' be his present age.

$$x + 20 = 3x \Rightarrow 2x = 20$$

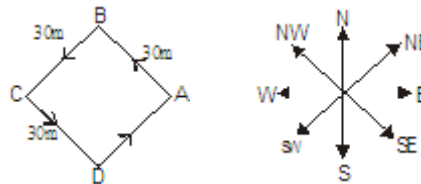
$$\Rightarrow \underline{\underline{x = 10}}$$
6. A Since $(a^2 - b^2) = (a + b)(a - b)$

$$(1502^2 - 1498^2) = (1502 + 1498)(1502 - 1498)$$

$$= 3000 \times 4 = \underline{\underline{12000}}$$
7. C 25th August is a Thursday
 So 22nd August is a Monday.
 So Mondays fall on 1st, 8th, 15th, 22nd and 29th of August.
 So there are five Mondays.
8. A 14 N 10 L 42 P 2 M 8

$$\begin{aligned}
 &\Rightarrow 14 \times 10 + 42 \div 2 - 8 && (\text{Use BODMAS rule}) \\
 &\Rightarrow 14 \times 10 + 21 - 8 \\
 &\Rightarrow 140 + 21 - 8 \\
 &\Rightarrow 161 - 8 = \underline{\underline{153}}
 \end{aligned}$$

9. A The movements of the girl are shown in the figure below. She is moving in direction DA ie, North-east.



10. D In all other pairs, the sum of two numbers is 8.
 11. E All except potato can be eaten raw
 12. E Clearly the code has been obtained by writing the first four and the last four letters of the word in reverse order.

Thus SERPEVRE \rightarrow SERP / EVRE
 \Rightarrow PRESERVE

$$\begin{aligned}
 13. \quad B \quad (a + b + c)^2 &= a^2 + b^2 + c^2 + 2(ab + bc + ca) \\
 &\Rightarrow 2(ab + bc + ca) = (a + b + c)^2 - (a^2 + b^2 + c^2) \\
 &= 13^2 - 69 \\
 &= 169 - 69 = \underline{\underline{100}}
 \end{aligned}$$

$$\therefore ab + bc + ca = \underline{\underline{50}}$$

$$14. \quad C \quad \text{Given expression} = 5 \times 4 \times 2 \times \frac{1}{2} \times \frac{3}{4} = 15$$

$$\begin{aligned}
 15. \quad D \quad \frac{4\frac{1}{2}}{?} &= \frac{?}{32} \\
 \text{Let } ? &= x \\
 \Rightarrow x^2 &= 32 \times \frac{9}{2} = 16 \times 9 = 144 \\
 \Rightarrow x &= \sqrt{144} = \underline{\underline{12}}
 \end{aligned}$$

$$16. \quad A \quad 9^2 = \underline{\underline{81}}, \text{ Just include 9 as the end digit, So } 819$$

$7^2 = 49$, Just include 9 as the end digit, So 499

$$\therefore 12 - 8 = 12^2 = \underline{\underline{1449}}$$

17. E 5 8 3 7 5 8 6 3 8 5 4 5 8 4 7 6 5 5 8 3 5 8 7 5 5 8 2 8 5

18. C We know that the length of the diagonal of a Cube, whose each side is 'a' is $\sqrt{3a^2}$

Here $a = \sqrt{3}$

$$\begin{aligned}\text{Hence diagonal} &= \sqrt{3 \times (\sqrt{3})^2} \\ &= \sqrt{3 \times 3} = 3\end{aligned}$$

19. B

$$\begin{aligned}a &= c^z \\ &= (b^y)^z \\ &= b^{yz} \\ &= (a^x)^{yz} \\ &= a^{xyz}\end{aligned}$$

$$(a^m)^n = a^{mn}$$

$$\begin{aligned}a &= a^{xyz} \Rightarrow a^1 = a^{xyz} \\ &\Rightarrow \underline{\underline{xyz = 1}}\end{aligned}$$

20. C The shape of wheel is circle and code for circle is point

21. B

$$\begin{aligned}2 \times 2 + 1 &= 4 + 1 = 5 \\ 4 \times 4 + 2 &= 16 + 2 = 18 \\ 6 \times 6 + 3 &= 36 + 3 = 39 \\ 8 \times 8 + 4 &= 64 + 4 = 68 \\ \therefore 10 \times 10 + 5 &= 100 + 5 = \underline{\underline{105}}\end{aligned}$$

22. C The only daughter of woman's father is she herself. So the person is woman's son i.e., the woman is the person's Mother

23. B

$$\begin{aligned}10^k &= \frac{0.001125}{1.125} = \frac{1.125 \times 10^{-3}}{1.125 \times 10^0} = \frac{1}{10^3} = 10^{-3} \\ 10^k &= 10^{-3} \Rightarrow \underline{\underline{k = -3}}\end{aligned}$$

24. C

$$\begin{aligned}\frac{0.213}{0.00213} &= \frac{213 \times 100000}{213 \times 1000} \\ &= \frac{213 \times 100}{213} = \underline{\underline{100}}\end{aligned}$$

25. D $12 \times 10 = 1205$, Just include 5 as end digit

$$11 \times 8 = 885, \quad ,,$$

$$\therefore 14 \times 15 = 2105 \quad ,,$$

$$\underline{\underline{=2105}}$$