

PRACTICE TEST OF TOP RANK

TEST OF REASONING & MENTAL ABILITY - NO.6

Time : 30 minutes

Marks : 100

1. The value of $\sqrt{10 + \sqrt{25 + \sqrt{108 + \sqrt{154 + \sqrt{225}}}}}$ is
 A. 4 B. 6 C. 8 D. 10 E. None of these
2. If $x \times y = x + y + \sqrt{xy}$, then the value of 6×24 is _____
 A. 41 B. 42 C. 43 D. 44 E. None of these
3. In a camp, there is a meal for 120 men or 200 children. If 150 children have taken the meal, how many men will be catered to with the remaining meal ?
 A. 20 B. 30 C. 40 D. 50 E. None of these
4. In a certain code language, if cat means Mat, Mat means Bat, Bat means Hat, Hat means Rat and Rat means fat, then according to that language, what is the one that we wear on our head ?
 A. Bat B. Rat C. Cat D. Fat E. None of these
5. EQUATOR : HOT :: POLE : _____
 A. ice B. snow C. freez D. cold E. None of these
6. If ACE = 81 and BAD = 49, what is the value of DIE ?
 A. 361 B. 324 C. 400 D. 289 E. None of these
7. Find the odd one among the following.
 A. Rain B. Fog C. Shower D. Drizzle E. None of these
8. When the time shown in a clock is 8 : 00 a.m, the minute hand is pointing towards North. In what direction is the hour hand pointing ?
 A. South B. West C. South-west D. North E. East
9. Choose the odd numeral pair from the following
 A. 1 – 0 B. 2 – 2 C. 3 – 6 D. 4 – 10 E. 5 – 20
10. Which of the missing numbers will complete the below series ?
 1, 8, 3, 16, 5, 32, 7, _____, _____
 A. (44, 9) B. (64, 9) C. 68, 8 D. (64, 8) E. None of these
11. Spring : Summer :: _____
 A. Sunday : Monday B. Thursday : Wednesday
 C. Tuesday : Friday D. Friday : Monday E. None of these
12. $\sqrt[3]{4\frac{12}{125}}$ is equal to _____
 A. $\frac{8}{5}$ B. $\frac{9}{5}$ C. 2 D. 3 E. None of these
13. If $a^4 + b^4 = a^2b^2$, then $(a^6 + b^6)$ equals
 A. 0 B. 1 C. $a^2 + b^2$ D. $a^2b^2 + a^4b^2$ E. None of these
14. $(6.5 \times 6.5 - 45.5 + 3.5 \times 3.5)$ is equal to
 A. 10 B. 9 C. 7 D. 6 E. None of these
15. .001 is equivalent to
 A. 10% B. 1% C. 0.01% D. 0.1% E. None of these
16. $\frac{c}{6}, \frac{e}{10}, \frac{g}{14}, \frac{i}{18}, ?$

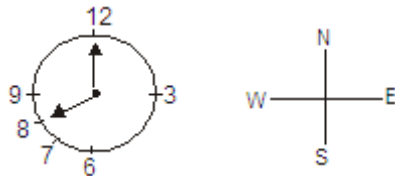
- A. $\frac{K}{22}$ B. $\frac{K}{11}$ C. $\frac{P}{22}$ D. $\frac{P}{11}$ E. None of these

17. If SEVEN is coded as 23136 and EIGHT as 34579, what will be the code for NINE ?
 A. 6463 B. 6364 C. 6349 D. 6436 E. None of these
18. If 'AB' is written as '2' . 'CD' is written as 12 and so on, then 'xy' should be written as -----
 A. 2 B. 25 C. 49 D. 600 E. 100
19. If the multiples of 3 lying between 2 and 34 be arranged in descending order, what will come at the 8th place ?
 A. 6 B. 9 C. 12 D. 15 E. None of these
20. If $1 \times 10 = 9$, $2 \times 10 = 18$, $3 \times 10 = 27$, then what is $8 \times 10 = ?$
 A. 36 B. 72 C. 78 D. 52 E. 45
21. Five birds are sitting on a tree. The pigeon is to the right of the parrot. The sparrow is above the parrot. The crow is next to the pigeon. The crane is below the crow. Which bird is at the centre ?
 A. crow B. pigeon C. parrot D. sparrow E. None of these
22. The length of a diagonal of a square is $15\sqrt{2}$ cm its area is,
 A. 112.5 cm^2 B. 450 cm^2 C. $\frac{225\sqrt{2}}{2} \text{ cm}^2$ D. 225 cm^2 E. None of these
23. A circle and a square have equal areas. The ratio of the side of the square and the radius of circle is,
 A. $1 : \sqrt{\pi}$ B. $\sqrt{\pi} : 1$ C. $1 : \pi$ D. $\pi : 1$ E. None of these
24. Identity the odd one from the following.
 A. Swarms B. Team C. Bevy D. Army E. Navy
25. Which one number when placed at the sign of interrogation shall complete the number series?
 5, 10, 17, 26, ?, 50
 A. 42 B. 34 C. 39 D. 37 E. 35

ANSWER WITH EXPLANATION

TEST OF REASONING & MENTAL ABILITY - NO.6

1. A Given expression = $\sqrt{10 + \sqrt{25 + \sqrt{108 + \sqrt{154 + \sqrt{225}}}}}$
- $$\begin{aligned} &= \sqrt{10 + \sqrt{25 + \sqrt{108 + \sqrt{154 + 15}}}} \\ &= \sqrt{10 + \sqrt{25 + \sqrt{108 + \sqrt{169}}}} \\ &= \sqrt{10 + \sqrt{25 + \sqrt{108 + 13}}} \\ &= \sqrt{10 + \sqrt{25 + \sqrt{121}}} \\ &= \sqrt{10 + \sqrt{25 + 11}} \\ &= \sqrt{10 + \sqrt{36}} = \sqrt{10 + 6} = 4 \end{aligned}$$
2. B. $6 \times 24 = 6 + 24 + \sqrt{6 \times 24}$
- $$= 30 + \sqrt{144} = 30 + 12 = 42$$
3. B There is a meal for 200 children. 150 children have taken the meal. Remaining meal is to be catered to 50 children
- Now, 200 children = 120 men
- $$50 \text{ children} = \left(\frac{120}{200} \times 50 \right) \text{ men} = 30 \text{ men}$$
4. B Hat is the one which we wear on our head and here the code for Hat is Rat.
5. D
6. B $ACE \Rightarrow A = 1, C = 3, E = 5$
- $$(1 + 3 + 5) = 9 \text{ and } 9^2 = 81$$
- Similarly $BAD = (2 + 1 + 4) = 7$ and $7^2 = 49$
- $$\therefore DIE = (4 + 9 + 5) = 18 \text{ and } 18^2 = 324$$
7. B Except fog, all others are types of Rainfall.
8. C The time shown in the clock is 8 : 00 am means the minute hand is at 12 and the hour hand is at 8.



The hour hand is pointing towards South west.

9. D. The given pair is as follows,

$$1 \times \underline{0} = 0$$

$$2 \times \underline{1} = 2$$

$$3 \times \underline{2} = 6$$

$$4 \times \underline{3} = \underline{12}$$

$$5 \times 4 = 20$$

10. B The series is

$$\begin{array}{ccccccc} & \xrightarrow{\times 2} & & \xrightarrow{\times 2} & & \xrightarrow{\times 2} & \\ 1, & 8, & 3, & 16, & 5, & 32, & 7, & 64, & 9 \end{array}$$

11. A Summer comes after spring. Similarly, Monday comes after Sunday.

$$\begin{aligned} 12. A \quad \sqrt[3]{4 \frac{12}{125}} &= \sqrt[3]{\frac{512}{125}} \\ &= \sqrt[3]{\frac{8 \times 8 \times 8}{5 \times 5 \times 5}} = \underline{\underline{\frac{8}{5}}} \end{aligned}$$

$$\begin{aligned} 13. A \quad a^4 + b^4 &= a^2 b^2 \\ \therefore a^4 + b^4 - a^2 b^2 &= 0 \rightarrow (1) \\ \text{Then } a^6 + b^6 &= (a^2)^3 + (b^2)^3 \text{ since } \boxed{(a^n)^m = a^{mn}} \\ &= (a^2 + b^2)(a^4 - a^2 b^2 + b^4) \text{ since } \boxed{a^3 + b^3 = (a+b)(a^2 - ab + b^2)} \\ &= (a^2 + b^2) \times 0 \quad \left(\begin{array}{l} \text{from eqn: (1)} \\ a^4 + b^4 - a^2 b^2 = 0 \end{array} \right) \\ &= \underline{\underline{0}} \end{aligned}$$

$$\begin{aligned} 14. B \quad 6.5 \times 6.5 - 45.5 + 3.5 \times 3.5 \\ &= (6.5)^2 - 2 \times 6.5 \times 3.5 + (3.5)^2 \\ &= (6.5 - 3.5)^2 = 3^2 = \underline{\underline{9}} \quad \begin{array}{l} \text{which is of the form} \\ a^2 - 2ab + b^2 = (a - b)^2 \end{array} \end{aligned}$$

$$15. D \quad 0.1\% = \frac{0.1}{100} = \underline{\underline{0.001}}$$

$$\begin{array}{ccccccc} c & \xrightarrow{+2} & e & \xrightarrow{+2} & g & \xrightarrow{+2} & i & \xrightarrow{+2} & k \\ & & & & & & & & \underline{\underline{22}} \\ 6 & \xrightarrow{+4} & 10 & \xrightarrow{+4} & 14 & \xrightarrow{+4} & 18 & \xrightarrow{+4} & \underline{\underline{22}} \end{array}$$

17. A

<i>S</i>	<i>E</i>	<i>V</i>	<i>E</i>	<i>N</i>	<i>E</i>	<i>I</i>	<i>G</i>	<i>H</i>	<i>T</i>	<i>N</i>	<i>I</i>	<i>N</i>	<i>E</i>
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	∴	↓	↓	↓
2	3	1	3	6	3	4	5	7	9		6	4	6

18. D

$$AB = 1 \times 2 = 2 \quad (\text{Take the place values of alphabets})$$

$$CD = 3 \times 4 = 12$$

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Similarly $xy = 24 \times 25 = \underline{\underline{600}}$

19. C

33, 30, 27, 24, 21, 18, 15, 12, 9, 6, 3

20. B

$$1 \times 10 - 1 = 9 \Rightarrow 10 - 1 = 9$$

$$2 \times 10 - 2 = 18 \Rightarrow 20 - 2 = 18$$

$$3 \times 10 - 3 = 27 \Rightarrow 30 - 3 = 27$$

Similarly $8 \times 10 - 8 = 72 \Rightarrow 80 - 8 = 72$

21. B

Sparrow

Parrot

Pigeon

Crow

Crane

22. D

Diagonal of square

$$= \sqrt{2} \times \text{side}$$

$$\therefore \sqrt{2} \times \text{side} = 15\sqrt{2}$$

$$\Rightarrow \text{side} = \frac{15\sqrt{2}}{\sqrt{2}} = 15$$

$$\text{Area of square} = (\text{side})^2 = 15^2 = 225$$

23. B

Let radius of circle be 'r' units
and side of square be 'x' units

Then $x^2 = \pi r^2$ (If $a:b = c:d$, then $ad = bc$)

$$\therefore \frac{x^2}{r^2} = \frac{\pi}{1} \Rightarrow \frac{x}{r} = \frac{\sqrt{\pi}}{1}$$

24. B

The term **team** implies a definite number of members, but in all others, the number of members is not defined.

25. D

The series is formed by adding 5, 7, 9, 11 and 13 successively to each of the previous numbers.

$$5 + 5 = 10, 10 + 7 = 17, 17 + 9 = 26, 26 + 11 = 37$$

$$37 + 13 = 50$$