

TEST OF REASONING & MENTAL ABILITY - NO.10

Time : 30 minutes

Marks : 100

1. If $\frac{x}{5} = \frac{y}{8}$, then $(x+5) : (y+8)$ is equal to,
A. 3 : 5 B. 13 : 8 C. 8 : 5 D. 5 : 8 E. None of these
2. If 'finger' is coded as 'Toe', 'Toe' as 'foot', 'foot' as 'Thumb', 'Thumb' as 'Ankle', 'Ankle' as 'palm' and 'palm' as 'knee'. Then, which one finger has a different name ?
A. foot B. ankle C. palm D. toe E. None of these
3. $23 : 35 :: 57 : \underline{\hspace{2cm}}$
A. 79 B. 73 C. 711 D. 911 E. None of these
4. How many 6's are there in the following number sequence each of which is immediately followed by an even number and immediately preceded by an odd number ?
3 6 2 5 6 3 2 6 3 2 6 2 7 6 4 6 5 8 6 7 6 4 2 6 8
A. one B. two C. three D. four E. more than four
5. Find the odd one out ?
A. JUDGE B. SCANT C. CROWD D. FLUSH E. None of these
6. Filter : Water :: _____ : _____
A. Curtail : Activities B. Exponge : Book
C. Edit : Text D. Censor : Play E. None of these
7. In a class of 65 students, each student got sweets that are 20% of the total number of students. How many sweets were there ?
A. 635 B. 845 C. 955 D. Cannot be determined
E. None of these
8. Evaluate $\sqrt{41 - \sqrt{21 + \sqrt{19 - \sqrt{9}}}}$?
A. 3 B. 5 C. 6 D. 4 E. None of these
9. If $2^{2n-1} = \frac{1}{8^{n-3}}$, then find the value of n ?
A. 3 B. 2 C. 0 D. -2 E. None of these
10. A father said to his son, "I was as old as you are at present at the time of your birth". If the father's age is 38 years now, the son's age five years back was ----- ?
A. 14 years B. 19 years C. 33 years D. 38 years E. None of these
11. What will be the re-arranged form of the word "HYDROGEN", If its letters having been arranged in alphabetical order are then substituted by the immediate previous letters in the English alphabet ?
A. CDFGMQZ B. EFHIOPSZ C. CDFGMNQX D. CDEGMNQX E. None of these
12. In a certain code, 'PORTRAIT' is written as 'TROPTIAR'. How would 'BIRTHDAY' be written in that code ?
A. TRIBYADH B. YADHTRIB C. IBRTADHYA D. TRIBDHYA E. None of these
13. If 'Q' means '+', 'J' means 'x', 'T' means '-', 'K' means \div , then
 $30 K 2 Q 4 J 6 T 5 =$
A. 18 B. 31 C. 28 D. 103 E. None of these
14. What should come next in the following letter sequence ?
MMPMPTMPTRMPTRWMPTRWKMP
A. P B. R C. K D. W E. None of these
15. The ratio of the fifth and sixth terms of the sequence,
1, 3, 6, 10, ----- is

A. 5 : 6 B. 5 : 7 C. 7 : 5 D. 6 : 5 E. None of these

16. If $(\sqrt{5})^7 \div (\sqrt{5})^5 = 5^P$. Then the value of P is _____

A. 5 B. 2 C. $\frac{3}{2}$ D. 1 E. None of these

17. $\sqrt[3]{1000} + \sqrt[3]{0.008} - \sqrt[3]{0.125}$ is equal to,

A. 9.7 B. 9.97 C. 9.997 D. 9.9997 E. None of these

18. Building is related to Room in the same way as Garden is related to _____

A. flower-beds B. Beauty C. Rose D. Vegetable E. None of these

19. 'Atom' is related to 'Molecule' in the same way as 'cell' is related to _____

A. Body B. Organ C. Tissue D. Bone E. None of these

20. Find the odd one out : -

A. 385 B. 427 C. 473 D. 671 E. None of these

21. The average of a non-zero number and its square is 5 times the number what is that number?

A. 9 B. 17 C. 29 D. 295 E. None of these

22. $\left(2\frac{1}{3}\right) + \left(1\frac{3}{4}\right)$ is equal to,

A. $\frac{7}{14}$ B. $\frac{12}{49}$ C. $4\frac{1}{12}$ D. None of these

E. Cannot be determined

23. $49 \times 49 \times 49 \times 49 = 7^?$

A. 8 B. 16 C. 7 D. 4 E. None of these

24. If 120 is 20% of a number, then 120% of that number will be

A. 20 B. 120 C. 360 D. 720 E. None of these

25. If loss is $\frac{1}{3}$ of selling price, the loss percentage is,

A. $16\frac{2}{3}\%$ B. 20% C. 25% D. $33\frac{1}{3}\%$ E. None of these

ANSWER WITH EXPLANATION

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1. D Let $\frac{x}{5} = \frac{y}{8} = K$. Then,
 $x = 5k, y = 8k$
 $\therefore (x+5):(y+8)$
 $\Rightarrow \frac{x+5}{y+8} = \frac{5K+5}{8K+8} = \frac{5(K+1)}{8(K+1)} = \frac{5}{8}$
 $\Rightarrow (x+5):(y+8) = 5:8$
2. B The Thumb is the different name of one finger and code for thumb is ankle.
3. C The numbers is a group of consecutive prime numbers. The missing number is 711.
4. C 3 6 2 5 6 3 2 6 3 2 6 2 7 6 4 6 5 8 6 7 6 4 2 6 8
5. A Except (A), other contain one vowel, while JUDGE contain 2 vowels.
6. D Filter removes impurities from water, while censor removes obscenities from plays.
7. B Number of Sweets got by each Student
= 20% of total number of students
 $= \frac{20}{100} \times 65 = 13$
 \therefore Total no: of sweets distributed = $65 \times 13 = 845$
8. C $\sqrt{41 - \sqrt{21 + \sqrt{19 - \sqrt{9}}}}$
 $= \sqrt{41 - \sqrt{21 + \sqrt{19 - 3}}}$
 $= \sqrt{41 - \sqrt{21 + 4}}$
 $= \sqrt{41 - 5} = 6$
9. B $2^{2n-1} = \frac{1}{8^{n-3}}$
 $\Rightarrow 2^{2n-1} = \frac{1}{(2^3)^{n-3}} = \frac{1}{2^{3(n-3)}} = \frac{1}{2^{(3n-9)}} = 2^{(9-3n)}$
 $\Rightarrow 2^{2n-1} = 2^{9-3n}$
 $\Rightarrow 2n-1 = 9-3n$
 $\Rightarrow n = 2$
 $(a^m)^n = a^{mn}$
 $\frac{1}{2^a} = 2^{-a}$
 $a^m = a^n \Rightarrow m = n$

10. A Let the son's present age = x years
Then, $38 - x = x \Rightarrow 2x = 38$
 $\Rightarrow x = 19$
Son's age five years back = $x - 5$
 $= 19 - 5 = 14$
11. C
- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| H | Y | D | R | O | G | E | N | |
| D | E | G | H | N | O | R | Y | ↙ (arranged in alphabetical order) |
| C | D | F | G | M | N | Q | X | ↙ (substituted by immediate previous letters) |
12. A Here logic is simple
First split the letters of word into 2 equal parts.
After that reverse the order of letters of each part
- | | | | |
|---|---|---|---|
| P | O | R | T |
|---|---|---|---|
- | | | | |
|---|---|---|---|
| P | A | I | T |
|---|---|---|---|
- \rightarrow
- | | | | |
|---|---|---|---|
| T | R | O | P |
|---|---|---|---|
- | | | | |
|---|---|---|---|
| T | I | A | R |
|---|---|---|---|
-
- | | | | |
|---|---|---|---|
| B | I | R | T |
|---|---|---|---|
- | | | | |
|---|---|---|---|
| H | D | A | Y |
|---|---|---|---|
- \rightarrow
- | | | | |
|---|---|---|---|
| T | R | I | B |
|---|---|---|---|
- | | | | |
|---|---|---|---|
| Y | A | D | H |
|---|---|---|---|
13. C $30 \text{ K } 2 \text{ Q } 3 \text{ J } 6 \text{ T } 5$
- $$= 30 + 2 + 3 \times 6 - 5$$
- $$= 15 + 3 \times 6 - 5$$
- $$= 15 + 18 - 5$$
- $$= 33 - 5$$
- (use BODMAS rule)
- $$= 28$$
14. E M | MP | MPT | MPTR | MPTRW | MPTRWK | MPT -----
T comes after P
15. B The pattern of the sequence is
- $$1 + 2 = 3$$
- $$3 + 3 = 6$$
- $$6 + 4 = 10$$
- $$10 + 5 = 15$$
- $$15 + 6 = 21$$
- \therefore Required ratio = $15 : 21$
 $= 5 : 7$
16. D
- $$\frac{(\sqrt{5})^7}{(\sqrt{5})^5} = 5^P$$
- $$\Rightarrow (\sqrt{5})^{7-5} = 5^P$$
- $$\Rightarrow (\sqrt{5})^2 = 5^P \Rightarrow [(5)^{\frac{1}{2}}]^2 = 5^P$$
- $$\Rightarrow 5^1 = 5^P \Rightarrow P = 1$$
- $$\left(\frac{a^m}{a^n} = a^{m-n} \right)$$
17. A
- $$\sqrt[3]{1000} + \sqrt[3]{0.008} - \sqrt[3]{0.125}$$
- $$= 10 + 0.2 - 0.5 = 9.7$$
18. A A building consists of rooms. Similarly a garden consists of flower - beds
19. C Atoms combine to form molecules, similarly cells combine to form tissues.

20. B Except (b), the middle digit is the sum of other two.

21. A Let the number be 'x'.

$$\begin{aligned}\text{Then } \frac{x+x^2}{2} &= 5x \\ \Rightarrow x^2 - 9x &= 0 \\ \Rightarrow x(x-9) &= 0 \\ \Rightarrow x &= 0, x = 9\end{aligned}$$

So number is 9

22. D

Given expression

$$\begin{aligned}&= \frac{1}{\left(\frac{7}{3}\right)} + \frac{1}{\left(\frac{7}{4}\right)} \\ &= \frac{3}{7} + \frac{4}{7} = \underline{\underline{1}}\end{aligned}$$

23. A $49 \times 49 \times 49 \times 49 = 7^2 \times 7^2 \times 7^2 \times 7^2 \quad \left[a^m \times a^n = a^{m+n} \right]$
 $= 7^{(2+2+2+2)} = \underline{\underline{7^8}}$

24. D Let the number be 'x'

Then 20 % of x = 120

$$\begin{aligned}\Rightarrow \frac{20}{100} \times x &= 120 \\ \Rightarrow x &= \underline{\underline{600}}\end{aligned}$$

Then, $\frac{120}{100} \times 600 = \underline{\underline{720}}$

25. C Let S . P = x

$$\therefore \text{loss} = \frac{x}{3} \quad \left[\text{Loss}\% = \frac{\text{Loss} \times 100}{C.P} \right]$$

$$C.P = x + \frac{x}{3} = \frac{4x}{3}$$

$$\text{Loss \%} = \left(\frac{x}{3} \times \frac{3}{4x} \times 100 \right) \% = \underline{\underline{25\%}}$$