PHYSICS

1. Velocity of sound in water is about

(A) 340 m/s   (B) 420 m/s   (C) 1000 m/s   (D) 1500 m/s

2. Deep-sea diving vessels have to withstand pressure from the crushing effect of sea water acting

(A) upwards   (B) downwards   (C) sideways   (D) in all directions

3. The frictional force ...... with the .... in roughness of the surfaces

(A) increases, increase   (B) decrease, decrease

(C) decrease, increase   (D) increases, decrease

4. When two bodies are rubbed against each other, they acquire

(A) equal and like charges   (B) equal and unlike charges

(C) unequal and like charges   (D) unequal and unlike charges

5. A plane mirror is approaching you at 10 cm s^{-1}. Your image shall approach you with a speed of-

(A) + 10 cm s^{-1} (B) – 10 cm s^{-1} (C) + 20 cm s^{-1} (D) – 20 cm s^{-1}

CHEMISTRY

6. Washing soda is :
(A)Sodium sulphate   (B) Sodium carbonate

(C) Calcium carbonate   (D) Sodium bicarbonate

7 . Sunidhi was asked by her teacher to prepare a dilute sulphuric acid from concentrated sulphuric acid. What should she do ?

(A) Add water to the acid   (B) Add acid to the water

(C) Add a base to the concentrated acid   (D) Add an alkali to the concentrated acid

8. State which of the following is not likely to be an element.
I. On heating it gives off a gas and leaves a residue.
II. Burns in air to form carbon dioxide and water.
III. Changes into solid at 273 K and to a gas at 373 K.

(A) I   (B) II and III   (C) I and III   (D) I, II, III

9. Which of these will react with oxygen to form an acidic oxide?
 (A) Sodium   (B) Sulphur   (C) Calcium   (D) Zinc

10. Which of the following is used in endoscopy?
     (A) Optical fibres   (B) Glass fibres
     (C) Glass wool   (D) None of these

BIOLOGY

`11. Which of the following is an antibiotic?

    (A) sodium bicarbonate   (B) streptomycin   (C) alcohol   (D) yeast

12 . Continuous growing of crops make the soil poorer and less-fertile, we can replenish soil
      by following method

    (A) using manure   (B) using fertilizers   (C) by crop-rotation   (D) all of the above

13. Alexander Fleming is associated with-

    (A) Fermentation.   (B) Antibiotic Penicillin.   (C) Tetanus disease.   (D) Cork cells.

14. Which gas is produced during incomplete combustion of fuels like petrol and diesel?

    (A) Carbon dioxide   (B) Nitrogen   (C) Carbon monoxide   (D) Sulphur dioxide

15. Internal fertilization occurs

    (A)in female body   (B)outside female bod

    (C)in male body   (D) outside male body

MATHEMATICS

16. Find X:- $\dfrac{9x}{7-6x} = 15$

    (A) 33/35   (B) 35/33   (C) 33   (D) 35

17. Evaluate $(5^{-1} \times 2) \times 6^{-1}$

    (A) 30   (B) 15   (C) 1/15   (D) 1/30

18. Find the value of m for which $5^m \div 5^{-3} = 5^5$.

   (A) 2   (B) 3   (C) 5   (D) 8

19. Find the smallest square number that is divisible by each of the numbers 8,15 and 20.

   (A) 20   (B) 15   (C) 8   (D) 120

20. Find the value of $\dfrac{(2)^3 + (10)^3}{\sqrt{1016064}}$

   (A) 1   (B) 3   (C) 4   (D) 2

21. 63% of $3\dfrac{4}{7}$ is:

   (A) 2.25   (B) 2.40   (C) 2.50   (D) 2.75

22. If $x + y = 12$ and $xy = 14$, find the value of $x^2 + y^2$.

   (A) 115   (B) 116   (C) 114   (D) 144

23 Find the area of a square, one of whose diagonals is 3.8 m long.

   (A) 14.44   (B) 28.88   (C)7.22   (D) none

24. One side of a rectangular field is 15 m and one of its diagonals is 17 m. Find the area of the field.

   (A) 60   (B) 120   (C) 255   (D) 225

25. A family has enough rice for 8 members for 30 days. Find the number of days the rice will last if the members increased to 10.

   (A) 12   (B) 24   (C) 40   (D) 6

MENTAL ABILITY TEST

26. What should come next in the following letter sequence?A A B A B C A B C D A B C D E A B C D

   (A) A   (B) E   (C) C   (D) B

27. 583 is related to 293 in the same way as 488 is related to____

 (A) 291   (B) 378   (C) 487   (D) 581

28.   Two bus tickets from city A to B and three tickets from city A to C cost Rs. 77 but three tickets from city A to B and two tickets from city A to C cost Rs. 73. What are the fares for cities B and C from A ?

 (A) Rs. 4, Rs. 23   (B) Rs. 13, Rs. 17   (C) Rs. 15, Rs. 14   (D) Rs. 17, Rs. 13 +-

29.   Directions : For the Assertion (A) and Reason (R) below, choose the correct alternative

Assertion (A) : Pressure cookers are fitted with ebonite handles.

Reason (R)   : Ebonite is strong.

 (A) Both A and R are true and R is the correct explanation of A.

(B) Both A and R are true but R is NOT the correct explanation of A.

 (C) A is true but R is false.   (D) A is false but R is true.

30. There are six persons A. B, C, D, E and F. C is the sister of F. B is the brother of E's husband. D is the father of A and grandfather of F. There are two fathers, three brothers and a mother in the group. Who is the mother ?

(A) A   (B) B   (C) C   (D) E

31. Four of the following five are alike in a certain way and so form a group. which one does not belong to that group?

(A) Tooth   (B) Chin   (C) Nose   (D) Ear   (E) Eye

32. Find the odd one out

 (A) crusade   (B) campaign   (C) expedition   (D) cruise

33. In a certain code language COMPUTER is written as RFUVQNPC. How will MEDICINE be written in that code language?

 (A) MFEDJJOE   (B) EOJDEJFM   (C) MFEJDJOE   (D) EOJDJEFM

34. In a certain code '13' means 'stop smoking' and '59' means 'injurious habit'. What is the meaning of '9' and '5' respectively in that code ?

I. '157' means 'stop bad habit'.

II. '839' means 'smoking is injurious'.

 (A) If the data in statement I alone are sufficient to answer the question

 (B) If the data in statement II alone are sufficient answer the question

(C) If the data either in I or II alone are sufficient to answer the question;

(D) If the data even in both the statements together are not sufficient to answer the question

35. If South-East becomes North, North-East becomes West and so on. What will West become?

(A) North-East   (B) North-West   (C) South-East   (D) South-West

36. In the following question, a matrix of certain characters is given. These characters follow a certain trend, row-wise or column wise. Find out this trend and choose the missing character accordingly.

72	24	6
96	16	12
108	?	18

(A) 12   (B) 16   (C) 18   (D) 20

37. Arrange the words given below in a meaningful sequence.

1.Presentation 2.Recommendation 3. Arriva 4.Discussion 5.Introduction

(A) 5, 3, 4, 1, 2   B) 3, 5, 4, 2, 1
(C) 3, 5, 1, 4, 2   (D) 5, 3, 1, 2, 4

38. Which of the following Venn- diagram correctly illustrates the relation ship among the classes : Tennis fans, Cricket players, Students

(A) 1   (B) 2   (C) 3   (D) 4

39. Find out the two signs to be interchanged for making following equation correct

5 + 3 x 8 - 12 / 4 =3

(A) + and –   (B) - and /   (C) + and x   (D) + and /

40. The admission ticket for an exhibition bears a password which is changed after every clock hour based on set of words chosen for each day. The following is an illustration of the code and steps of rearrangement for subsequent clock hours. The time is 9 a.m. to 3 p.m.

Day's first password :

First Batch ----- 9 a.m. to 10 a.m.

is not ready cloth simple harmony burning

Second Batch ----- 10 a.m. to 11 a.m.

ready not is cloth burning harmony simple

Third Batch ----- 11 a.m. to 12 noon

cloth is not ready simple harmony burning

Fourth Batch ----- 12 noon to 1 p.m.

not is cloth ready burning harmony simple

Fifth Batch ----- 1 p.m. to 2 p.m.

ready cloth is not simple harmony burning and so on.

 If the password for 11 a.m. to 12 noon was --- "soap shy miss pen yet the she", what was the password for the first batch ?

 (A) pen miss shy soap she the yet   (B) shy miss pen soap yet the she

 (C) soap pen miss shy she the yet   (D) miss shy soap pen she the yet

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