PHYSICS

1. It is warmer to have two thin blankets than to have a single thick blanket because-

(A) thick blanket cannot give more warmth

(B) two blankets allow more heat to pass through them

(C) air between the two blankets is a good conductor of heat

(D) air between the thin blankets does not allow heat to pass through it since it is a bad conductor

2. The brakes applied to a car produce a negative acceleration of $6 ms^{-2}$. If the car stops after 2 seconds, the initial velocity of the car is-

(A) $6 ms^{-1}$ (B) $12\ ms^{-1}$ (C) $24\ ms^{-1}$ (D) Zero

3. Which is the false statement ?

(A) Fuse wire has low resistance and melting point

(B) Heater wire has high specific resistance and melting point

(C) In these day M.C.B. is used in place of fuse wire

(D) Current does not flow in close circuit

4. If the angle of incidence is $50°$, then calculate the angle between the incident ray and the reflected ray-

(A) $50°$ (B) $80°$ (C) $130°$ (D) $100°$

5. The energy possessed by wind is

(A) Kinetic energy   (B) Potential energy   (C) Thermal energy   (D) Sound energy

CHEMISTRY

6. To keep a very low temperature, dry ice is used. It is solid_____

(A) Hydrogen   (B) Water   (C) Air   (D) Carbon dioxide

7. Which element is common between brass and bronze?

(A) Copper   (B) Zinc   (C) Tin   (D) Bromine

8. Vegetable fibres are made up of:

(A) Cellulose   (B) Protein   (C) Nylon   (D) Rayon

9. If pH of two solutions A and B are 5 and 6 respectively. Choose the wrong statements.

     I.   Both A and B changes blue litmus to red
     II.   Only A changes blue litmus to red.

III.   A is more acidic than B
IV.   B is more acidic than A

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

10. In solids, heat gets transferred through the process of:

(A) Radiation   (B) Convection   (C) Conduction   (D) Evaporation

BIOLOGY

11. The micro-organism which convert the dead plants and animals to humus are known as
(A) Herbivores   (B) Carnivores   (C) Decomposers   (D) Parasites

12. Relation where 2 organisms stay together for mutual benefits is called
(A) mutalism   (B)parasitism   (C) commensalism   (D) ammensalism

13. Reproduction in which new organism is produced from roots, stems and leaves is called
(A) fragmentation   (B) budding   (C) vegetative propogation   (D) regeneration

14. Removal of upper layer of soil is due to
(A) pollution   (B) rains   (C) industrialization   (D) deforestation

15. Pulse of a person is calculated per....
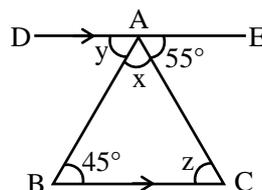(A) hour   (B) day   (C) minute   (D) month

MATHEMATICS

16. In figure, find the values of Z.

(A)45   (B) 35   (C) 20   (D) 80

17. If the circumference of a circular sheet is 154 m.find the area of the sheet.

(A) 471.62 m^2 (B) 470.62 m^2 (C) 469.1 m^2 (D) 460.32 m^2

18. In figure, DE || BC find the values of y.

(A) 55   (B) 80

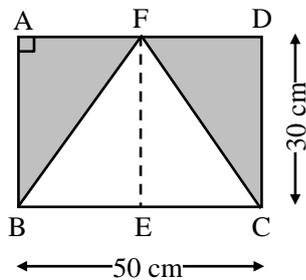(C) 180   (D) 45

19. Find the value of x for which the following forms a proportion :16 : 8 :: 7 : x

(A)7   (B) 4   (C) 3.5   (D) 2

20. $3(x + 2) - 2(x - 1) = 7$

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

21. Every positive integer is greater than

(A) zero   (B) every negative intege   (C) both (A) and (B)   (D)none of these

22. $0.088 \div 2.2$ is equal to

(A) 4   (B) 0.4   (C) 0.04   (D) none of these

23 Calculate the area of shaded region in the given figure.

(A) 1500 cm^2 (B) 750 cm^2 (C) 700 cm^2 (D) 1000 cm^2

24. For what value of x, the mode of the following data is 26 ?21, 51, 24, 26, 24, 26, 35, x – 1

(A) 26   (B) 25   (C) 27   (D) 28

25. Write the coefficient of : x^2 in $\frac{7}{8} x^2 y^2 z^3$

(A) 7   (B) 0   (C) 8   (D) none

MENTAL ABILITY TEST

26 . If RAVE is coded as SXWB then how will SCAW be coded ?
(A) TDBO   (B) TZBK   (C) PZXK   (D) TVXK   (E) None of these

27.If the second half of the series is written in the reverse order then which will be the 9th letter to the right of 7th letter from your left ?ABCDEFGHIJKLMNOPQRSTUVWXYZ.
(A) Y   (B) Z   (C) PA   (D) X   (E) None of these

28.Directions—In each of the following questions one word is different from the rest. Find out the word which does not belong to the group—

(A) GTSH   (B)BYXC   (C) ETUF   (D) LONM   (E) KPIR

29. As 'Plateau' is related a 'Mountain', similarly 'Bush' is related to what?
(A) Plants   (B) Field   (C) Forest   (D) Trees   (E) Stem

30. Directions—In each of the following questions a series is given. Which one of the alternatives will replace the question-mark (?) ?
JD, KF, ?, PM, TR
(A) MI   (B) NJ   (C) NI   (D) OJ   (E) None of these

31. The position of Shyamal is 13th from the last. If there are 21 students in all in his class, what is his position from the beginning?
(A) 8t   (B) 9th (C) 7th (D) 10th (E) None of these

32.Sonalika goes 12 km towards North from a fixed point and then she goes 8 km towards South from there. In the end she goes 3 km towards east. How far and in what direction is she from her starting point?
(A) 7 km East   (B) 5 km West   (C) 7 km West   (D) 5 km North-East   (E) None of these

33. How many 7's are there in the following number series; which are preceded by an even number but not followed by any odd?
43752372136754274271 2276572
(A) One   (B) Two   (C) Three   (D) Four   (E) More than four

34. In each question of the following two statements are given and four conclusions I, II, III and IV are given under them. The given statements may be contrary to the universal opinion, even then you have to assume them as true. Then decide which conclusion on the basis of given statements is logically valid.

1. **Statements:** All kings are beggars.
All beggars are monks.
Conclusions :
I. All beggars are kings.
II. All kings are monks.
III. Some monks are beggars.
IV. No monk is beggar.
(A) Only I com   (B) All come   (C) Only II and III come   (D) Only III and IV come
(E) None of these comes

35. Pointing to a picture of a child Narendra says, "The brother of this child's mother, is the only son of my mother's father." How is Narendra related to the mother of the child?
(A) Daughter
(B) Sister
(C) Maternal grand mother
(D) Aunt
(E) None of these

36. If x means –, – means x, + means ÷ and ÷ means + then—
13 – 12 ÷ 400 + 20 x 100 = ?
(A) 1/1760
(B) 76
(C) 176
(D) 186
(E) None of these

37. Directions—In each of the following questions one statement or advertisement is followed by two or three assumptions. On the basis of the statement choose which is/are implicit.

 Statement—Saroj made an application to the bank for a loan of Rs. 1,80,000 by mortgaging his house to the bank and promised to repay it within five years.
Assumptions :
I. The bank has a practice of granting loans for Rs. 1,00,000/- and above.
II. The bank accepts house as collateral security against such loans.
III. The bank may grant loan to Saroj.
(A) All are implicit
(B) None is implicit
(C) Only I and II are implicit
(D) Only II and III are implicit

38. In newspaper it is necessary—
(A) Advertisement
(B) Date
(C) News
(D) Editor
(E) Article

39.Directions—In each of the questions from 1 to 5 a statement followed by two arguments is given. You have to decide which of the given statements is a strong argument and which is weak argument. Give answer

(A) if only first argument is strong, give answer

(B) if only second argument is strong, give answer

(C) if either first or second argument is strong, give answer

(D) if neither first nor second argument is strong and given answer

 (E) if both first and second arguments are strong.

40. **Statement**—Should military training be made compulsory in our country like other countries?

Arguments :

I. Yes, every citizen has right to protect his country.

II. No, it is against the policy of non-violence.

. (A) FLOK   (B) CROWD   (C) HERD   (D) SWARM   (E) TEAM