myclassroom

For students moving from class 10th to class 11th

Exam ID : 1232

Time : 1:30 Hrs

Max. Marks : 240

IMPORTANT INSTRUCTIONS

Note: All Questions are compulsory:

Section-1: It contains 30 questions in total.

Question No. 1 to 10 belongs to Physics.

Question No. 11 to 20 belongs to Chemistry.

Question No. 21 to 30 belongs to Biology.

Section-2: It contains 10 questions in total.

Question No. 31 to 40 belongs to Mathematics.

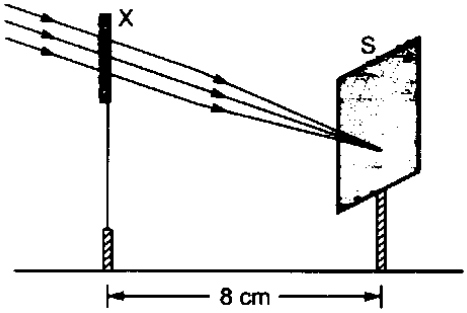
Section-3: It contains 20 questions in total.

Question No. 41 to 60 are to Mental Ability questions.

Marking Scheme: Each question carries 4 marks. **For each correct response, the candidate will get 4 marks. There is no negative marking for incorrect response or unattempted questions.**

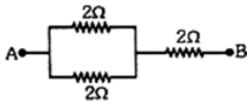
Section- I (SCIENCE)

1. A student used a device (X) to obtain/focus the image of a well illuminated distant building on a screen (S) as shown alongside in the diagram. Select the correct statement about the device (X)

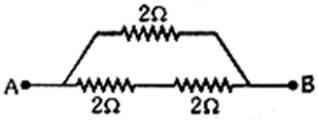


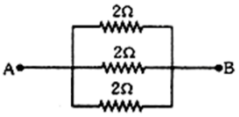
(a) This device is a concave lens of focal length 8 cm.
(b) This device is a convex mirror of focal length 8 cm.
(c) This device is a convex lens of focal length 4 cm.
(d) This device is a convex lens of focal length 8 cm.

2. Which of the following networks yields maximum effective resistance between A and B ?

(a) 

(b) 

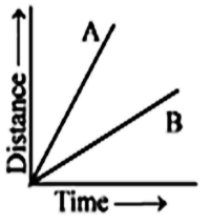
(c) 

(d) 

3. Two parallel conductors carrying current in the same directions
   (a) Repel each other (b) Attract each other
   (c) Sometimes attract and sometimes repel each other
   (d) None of these

4. The direction of magnetic field lines of a bar magnet is:
   (a) from south pole to north pole for outside the magnet
   (b) from north pole to south pole for inside the magnet
   (c) from south pole to north pole for outside and for inside the magnet
   (d) from south pole to north pole for inside the magnet and

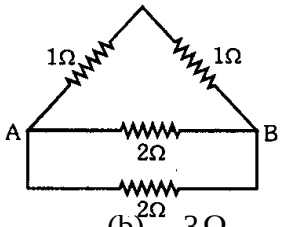
5. Figure shows the distance- time graph for the motion of two vehicles A and B. Which one of them is moving faster?



(a) A (b) B

(c) Both A and B are moving with same speed (d) None of these

6. What is the resistance between A and B in the given network (Fig.)?



(a) $2\,\Omega$ (b) $3\,\Omega$ (c) $\frac{3}{2}\,\Omega$ (d) $\frac{2}{3}\,\Omega$

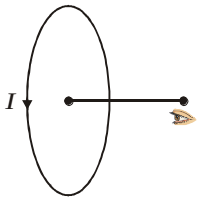
7. An object is placed at the centre of curvature of a concave mirror. The distance between its image and the pole is

(a) equal to f (b) between f and 2f (c) equal to 2f (d) greater then 2f

8. An object A is placed at a distance d in front of a plane mirror. If a person stands directly behind the object at a distance S from the mirror, then the distance of the image of A from the person is

(a) 2 S (b) 2 d (c) S + d (d) S + 2d

9. A current passes through a coil in the anticlockwise direction. The magnetic field at a point on the axis of the coil is :



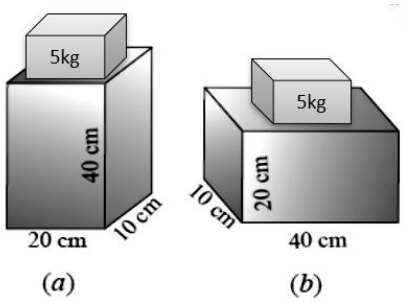
(a) parallel to the plane of the coil

(b) perpendicular to the axis of the coil

(c) along the axis towards the centre of the coil

(d) along the axis away from the centre of the coil

10. A block of wood is kept on top of the table in two ways (a) and (b). The mass of wooden block is 5 kg and the dimensions of the table are 40 cm× 20 cm × 10 cm. Find the pressure exerted on the table by wooden block in each case.



(a) 2500 pascal,1250 pascal (b) 2000 pascal,1500 pascal

(c) 1500 pascal,3050 pascal (d) none of these

11. According to Arrhenius theory of acids and bases, an acid gives
(a) H^+ in water (b) OH^- in water
(c) Both (a) & (b) (d) OH^- in acid medium

12. The functional group in methanol and methanal respectively are :
(a) $-OH, -CHO$ (b) $-CHO, -OH$
(c) $-OH, -COOH$ (d) $-CHO, -COOH$

13. Which of the following is not a decomposition reaction?
(a) $CaCO_3 \rightarrow CaO + CO_2$ (b) $2KClO_3 \rightarrow 2KCl + 3O_2$
(c) Digestion of food in the body (d) $H_2 + Cl_2 \rightarrow 2HCl$

14. The most malleable metal is –
(a) Sodium (b) Silver
(c) Gold (d) Lead

15. Which of the following has lowest number of electrons in the valency shell ?
(a) O (b) C (c) N (d) B

16. Milk of magnesia is an –
(a) Acid (b) Antacid (c) Alkali (d) Rock salt

17. A covalent bond is formed by
(a) complete transfer of electrons (b) one sided sharing of electron
(c) mutual sharing of electrons (d) all of the three above.

18. Which of the following a double displacement reaction?

(a) $2H_2 + O_2 \rightarrow 2H_2O$ (b) $2Mg + O_2 \rightarrow 2MgO$

(c) $AgNO_3 + NaCl \rightarrow AgCl \downarrow + NaNO_3$ (d) $H_2 + Cl_2 \rightarrow 2HCl$

19. $NaHCO_3$ is chemical formula of –

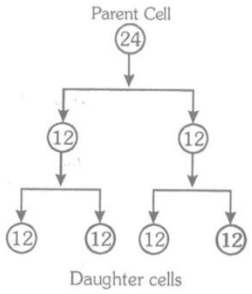
(a) Sodium bicarbonate (b) Sodium carbonate

(c) Sodium hydroxide (d) Sodium Chloride

20. Which of the following pairs of elements does not belong to same group ?

(a) Cl, Br (b) N, P (c) Mg, Ca (d) Al, Si

21. The chart given here shows a cell division. The diviison is :



(a) Mitosis (b) Meiosis

(c) Division of a zygote during development (d) Division of an Amoeba during binary fission

22. Bile is produced and secreted by –

(a) Gall bladder (b) Pancreas (c) Spleen (d) Liver

23. Environment day falls on :

(a) 28th February (b) 23rd March (c) 5th June (d) 16th September

24. About how long ago was the earth formed ?

(a) 4.6 billion years ago (b) 10 billion years ago

(c) 3.0 billion years ago (d) 20 billion years ago

25. Which one of the endocrine glands is known as master gland ?

(a) Pituitary (b) Adrenal (c) Thyroid (d) Parathyroid

26. Which of the following tests is for determining, the sex of the foetus?

(a) Blood group test (b) Amniocentesis

(c) Blood sugar test (d) pH value test

27. The main function of intestinal villi is –

(a) Stimulate Peristalsis (b) Prevent antiperistalsis

(c) Provide large surface area for absorption (d) Distribute digestive enzymes uniformly

28. Sustainable consumption can be achieved by :

(a) 3-R approach (b) Reducing the use of fossil fuels

(c) By using alternative sources of energy (d) All of these

29. Homologous organs are :

(a) similar in origin with similar or dissimilar functions

(b) similar in origin and dissimilar functions

(c) dissimilar in origin and dissimilar in structures

(d) dissimilar in origin but similar in functions

30. Cardiac cycle in man takes about :-

(a) 0.5 seconds (b) 1.0 second

(c) 1.2 seconds (d) 0.8 seconds

Section- II (MATHEMATICS)

31. Triangle ABC is such that AB = 3 cm, BC = 2 cm and CA = 2.5 cm, Triangle DEF is similar to ΔABC. If $EF = 4cm$, then the perimeter of ΔDEF is

(a) 7.5 cm (b) 15 cm (c) 22.5 cm (d) 30 cm

32. The distance between the points (a, b) and (-a, - b) is :

(a) $a^2 + b^2$ (b) $\sqrt{a^2 + b^2}$ (c) 0 (d) $2\sqrt{a^2 + b^2}$

33. If A be the event such that $P(A) = \frac{2}{5}$, then P(not A) is equal to

(a) $\frac{3}{5}$ (b) $\frac{4}{5}$ (c) $\frac{1}{5}$ (d) None of these

34. Discriminant of the roots of the equation $-3x^2 + 2x - 8 = 0$ is

(a) -92 (b) -29 (c) 39 (d) 49

35. How many two digit numbers which are exactly divisible by 7 ?

(a) 13 (b) 14 (c) 15 (d) None of these

36. A point P is 10 cm from the centre of a circle. The length of the tangent drawn from P to the circle is 8 cm. The radius of the circle is equal to :

(a) 4 cm (b) 5 cm (c) 6 cm (d) None of these

37. If HCF (16, y) = 8 and LCM (16, y) = 48, then the value of y is :

(a) 24 (b) 16 (c) 8 (d) 48

38. If one zero of the quadratic polynomial x^2+3x+k is 2, then the value of k is

(a) 10 (b) –10 (c) 5 (d) –5

39. If the pair of linear equations: x – y = 1, x + ky = 5 has a unique solution x = 2, y = 1, then value of k is :

(a) –2 (b) 3 (c) – 3 (d) 4

40. In $\Delta ABC, \angle B = 90°$. If $AB = 14cm$ and $AC = 50cm$ then tan A equals :

(a) $\frac{24}{25}$ (b) $\frac{24}{7}$ (c) $\frac{7}{24}$ (d) $\frac{25}{24}$

Section- III (MAT)

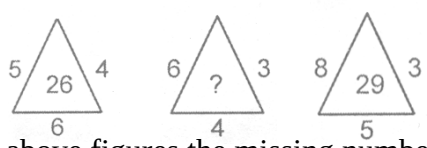
41. In the sequence 2, 8, 18, 32, ?the missing number ? is

(a) 62 (b) 60 (c) 50 (d) 46

42. In series CG, DI, ?, IP, MU the missing term? is

(a) EL (b) FL (c) FK (d) None of these

43.



In above figures the missing number? is

(a) 32 (b) 22 (c) 18 (d) 27

44. If in any code language **CLERK** is coded as **AHYJA** how is **JOB** coded in that language.

(a) HKW (b) HKV (c) HKU (d) None of these

45. If the following words are arrange in alphabetical order then which word comes in the middle ?

Select, Seldom, Selfish, Seller, Send, Second, Section

(a) Selfish (b) Seldom (c) Select (d) Send

46. If × means ÷, - means ×, ÷ means + and + means -, then (3 - 15 ÷ 19) × 8 + 6 = ?

(a) 8 (b) 4 (c) 2 (d) -1

47. Pointing towards a man in the photograph, lady said "the father of his brother is the only son of my mother". How is the man related to lady?

(a) Brother (b) Son (c) Cousin (d) Nephew

48. I am facing south. I turn 90° in the anti-clockwise direction and walk 30 m and then Turing north I walk 40 m and then turning west I go 60 m. Then turning left walk 80 m. How far am I from the starting point ?

(a) 30 m (b) 40 m (c) 50 m (d) 210 m

49. In the question, numbers given in three out of the four alternatives have some relationship. You have to choose the one which does not belong to the group.

(a) 3 : 8 (b) 6 : 35 (c) 7 : 50 (d) 1 : 0

50. If on 14th day after 5th March be Wednesday, what day of the week will fall on 10th Dec. of the same year ?

(a) Friday (b) Wednesday (c) Thursday (d) Tuesday

51. Minute hand & hour hand do not make an angle of 180° with each other

(a) between 6 to 7 o'clock (b) between 12 & 1 o'clock

(c) between 5 & 6 o'clock (d) between 11 & 12 o'clock

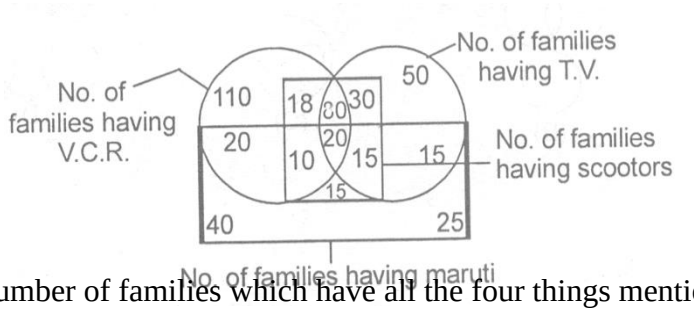
52. A cube of side 4 cm. is painted black on all of its surfaces and then divided into various smaller cubes of side 1 cm each. The smaller cubes so obtained are separated. Number of smaller cubes with two surfaces painted are

(a) 8 (b) 48 (c) 24 (d) None of these

53. How many parallelograms are there in the figure below ?

(a) 14 (b) 16 (b) 18 (d) None of these

Directions : (54-55) Study the figure below and answer the following questions.



54. Find out the number of families which have all the four things mentioned in the diagram.

(a) 40 (b) 30 (c) 35 (d) 20

55. Find out the number of families which have T.V. and scooter both but have neither V.C.R. nor Maruti.

(a) 15 (b) 30 (c) 4 (d) 50

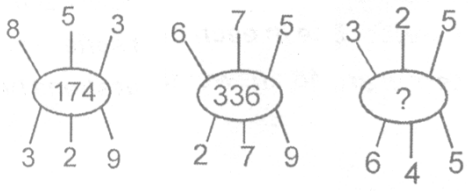
56. In the sequence 240,?,120, 40, 10, 2 the missing number "?" is

(a) 180 (b) 160 (c) 240 (d) none of these

57. In series 17Z5, 15X4, 13V3, ?, 9R1the missing term "?" is

(a) 11U2 (b) 11T2 (c) 11T1 (d) None of these

58.



In above figures the missing number "?" is

(a) 140 (b) 150 (c) 200 (d) 180

59. If the code for **ALLOWANCE** is **ZMKPVBMDD,** the word **DEARNESS** would be coded as :

(a) CFBAODTR (b) EDZQMFRT (c) CDZTMFTER (d) CFZSMFRT

60. Manisha ranked sixteenth from the top and twenty ninth form the bottom among those who passed an examination. Six students did not participate in the competition and five failed in it. How many students were there in the class?

(a) 44 (b) 57 (c) 56 (d) 55