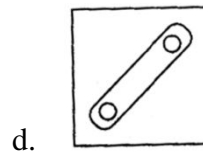
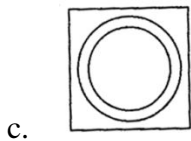
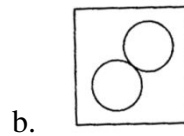
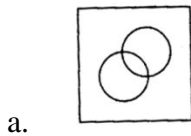


- a. S
- c. G

- b. U
- d. Either (a) or (c)

6. A person starts from point A and covers a distance of 2 km in East direction to reach point B. Now he turns towards South-East and travels another 5 km to reach point C. Finally, he turns towards North and travels another 4 km. Calculate the total distance travelled by man and in which direction he is from the starting point?
- a. 5 km, East
 - b. 11 km, East
 - c. 11 km, South-East
 - d. 5 km, South-East

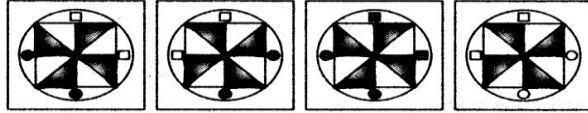
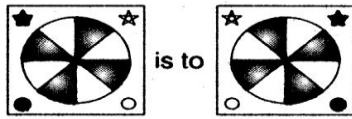
7. At an office where an interview was conducted to select persons for clerical posts, they came to know that, out of 20 persons, 12 knew only typing and 5 knew only shorthand and the rest knew both typing and shorthand. Which of the following diagrams represents this fact?



8. Use the relationships defined below to solve questions.
- (i) 'P x Q' means 'P is the father of Q'
 - (ii) 'P + Q' means 'P is the brother of Q'.
 - (iii) 'P * Q' means 'P is the sister of Q'.
 - (iv) 'P - Q' means 'P is the mother of Q'.
 - (v) 'P ÷ Q' means 'P is the son of Q'.
 - (vi) 'P = Q' means 'P is the daughter of Q'.

Which of the following means is the mother of X and Z?

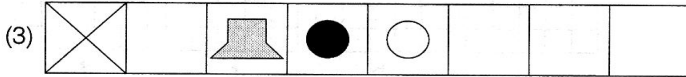
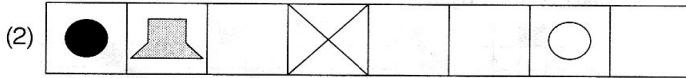
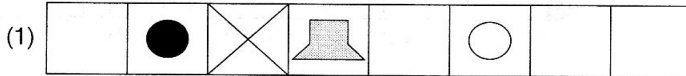
- a. $Y - X + Z$
 - b. $Y \div X \times Z$
 - c. $Z + U - Z$
 - d. $Y - X \div Z$
9. Which option figure completes the second pair in the same way as the first pair ?



a. b. c. d.

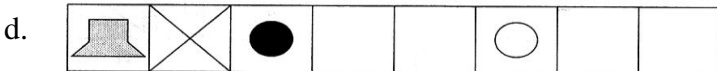
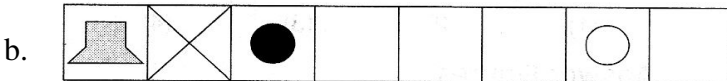
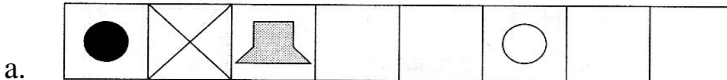
10. What comes next in the series given below?

Question Figures

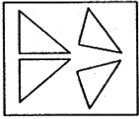


(4) ?

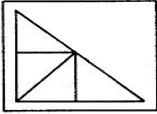
Answer figures



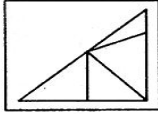
11. Find out the figure which can be formed from the pieces given in figure (x)



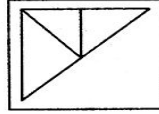
(x)



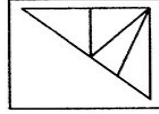
a



b

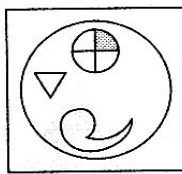
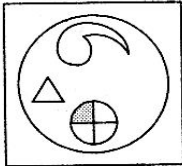


c

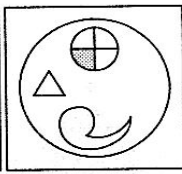


d

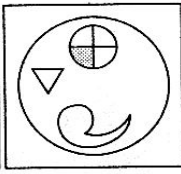
12. In the following question identify the correct water image of the given figure.



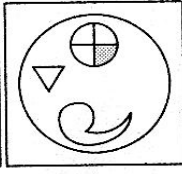
a



b



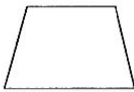
c



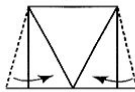
d

13. There is a set of three sheets (X), (Y) and (Z) have been given, showing a sequence in which a paper (P) is folded and finally cut from a particular section. Select the answer figure which most closely resemble the unfolded piece of paper.

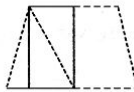
Sheets



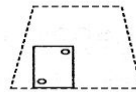
(P)



(X)

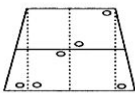


(Y)

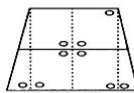


(Z)

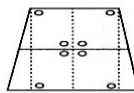
Answer Sheets



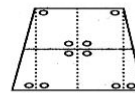
a



b

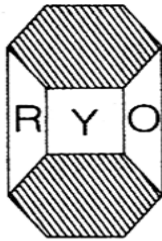


c



d

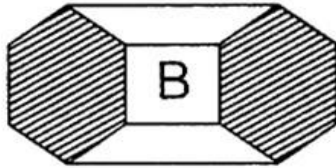
14. The lateral side of a block in the shape of a six sided prism is painted in red, orange, green, yellow, pink and blue. Two of its positions are shown along side.
When the block is laid as the given figure, than that are the colours adjacent to blue side?



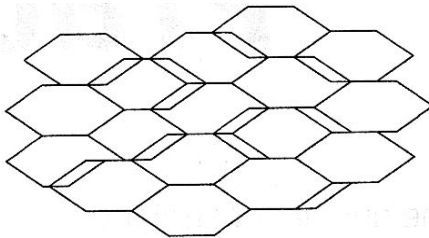
(i)



(ii)

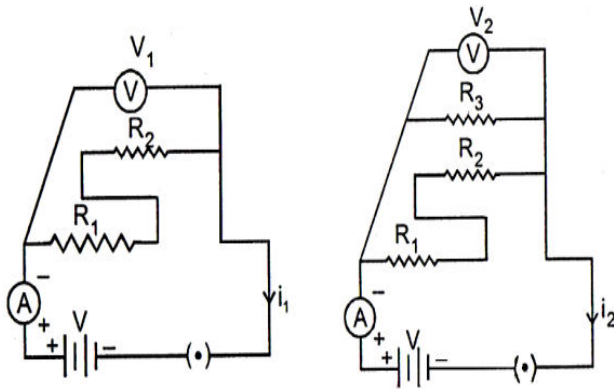


- a. Red and Pink
b. Green and Pink
c. Green and Orange
d. Violet and Orange
15. Count the number of hexagons and parallelograms in the given figures.



- a. 17 hexagons and 11 parallelograms
b. 16 hexagons and 10 parallelograms
c. 17 hexagons and 10 parallelograms
d. None of these

19. Circuit I :- Ammeter reads current i_1 and voltmeter reads V_1
 Circuit II :- Ammeter reads current i_2 and voltmeter reads V_2



The relationship between the readings is :

- a. $i_1 > i_2$; $V_1 = V_2$ b. $i_1 < i_2$; $V_1 = V_2$
 c. $i_1 < i_2$; $V_1 < V_2$ d. $i_1 > i_2$; $V_1 > V_2$

20. In column-I, the situations are shown in which a conductor is placed in a region of uniform magnetic field and the direction of current is shown by arrow, while in column-II, the direction of force acting on that wire is given. Match the entries of column-I with the entries of column-II.

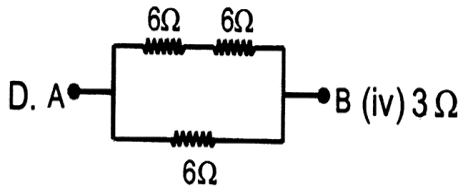
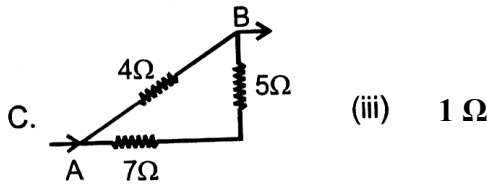
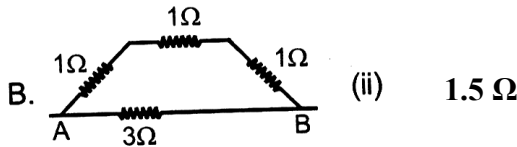
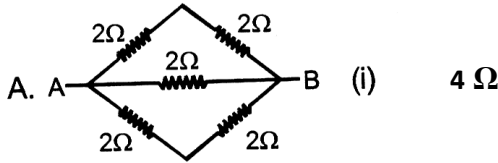
	Column-I		Column-II
(I)		P.	Rightwards
(II)		Q.	Leftwards
(III)		R.	Into the plane of paper
(IV)		S.	Out of the plane of paper

- a. (I)-P, (III)-S, (III)-P, (IV)-S b. (I)-Q, (III)-S, (III)-P, (IV)-S
 c. (I)-Q, (II)-R, (III)-R, (IV)-Q d. (I)-P, (III)-S, (III)-P, (IV)-S

21. What happens when one molecule of sodium carbonate is made to react with one molecule of hydrochloric acid ?
- A salt is produced and CO_2 and H_2O are formed.
 - A salt and a normal salt are produced.
 - A salt is produced and CO_2 gas is evolved.
 - A salt is produced and H_2 gas is evolved.
22. The necessary condition(s) for the formation of ionic bond is/are :
- High electron affinity of electronegative element.
 - Low ionization energy of electropositive element.
 - Both (a) and (b)
 - None of these
23. In the formation of a compound A_2B_3 , two atoms of A lose three electrons each while three atoms of B gain two electrons each. Which of the following statement is incorrect regarding the compound A_2B_3 ?
- A_2B_3 will conduct electricity in solid state, molten state as well as in aqueous solution.
 - A_2B_3 will have an ordered arrangement of its constituent species
 - High temperatures are to be supplied to cause melting and boiling of A_2B_3
 - A_2B_3 will be insoluble in organic solvents but soluble in water
24. 12 grams of potassium sulphate dissolves in 75 grams of water at 60°C . Its solubility at 60°C is (Density of water = 1g/ml)
- 1.6 g/ml
 - 0.16 g/ml
 - 16.0 g/ml
 - 160 g/ml
25. $a\text{FeS}_2 + b\text{O}_2 \rightarrow x\text{Fe}_2\text{O}_3 + y\text{SO}_2$. The above equation balances when :
- $a = 4, b = 11, x = 2, y = 8$
 - $a = 11, b = 4, x = 8, y = 2$
 - $a = 2, b = 4, x = 8, y = 2$
 - $a = 4, b = 11, x = 8, y = 2$
26. With reference to normal human being, which of the following statements is not correct :
- Human saliva is slightly acidic
 - The salivary enzyme (ptyalin) breaks down cooked starch into maltose.
 - An adult human may secrete 1 to 1.5 litres of saliva per day.
 - Saliva is secreted by six pairs of salivary glands in human beings.

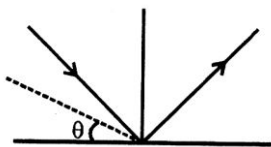
32. A current is flowing in a circular loop of wire in a clockwise direction. The magnetic field at centre of wire is :
- zero
 - directed downwards
 - directed upward
 - inversely proportional to radius of loop

33. Choose the **correct option** :



- A-(i), B-(ii), C-(iii), D-(iv)
- A-(iii), B-(ii), C-(iv), D-(i)
- A-(iv), B-(ii), C-(iii), D-(i)
- A-(ii), B-(iv), C-(i), D-(iii)

34. A ray of light falls on mirror, if the mirror is tilted through an angle θ as shown. The reflected ray tilts through an angle 2θ , the **magnification** produced by a plane mirror is



- a. -1
c. -2
- b. +1
d. 2

35. 1 Tesla equal

- a. $1 \text{ N}^{-1} \text{ AM}$
c. $1 \text{ NA}^{-1} \text{ M}^{-1}$
- b. $1 \text{ NA}^{-1} \text{ M}^{-2}$
d. 1 NAM^2

36. Which of the following statement is incorrect ?

- a. Li & Mg, Be & Al, B & Si are bridge elements
b. Successive ionization potentials have higher values
c. Cations are always larger than the parent atom
d. According to mendleev, "the properties of elements are the periodic functions of their atomic masses".

37. Choose the correct options from the following

- | Alloys | Composition |
|-----------|---------------|
| A Solder | (i) Ag + Hg |
| B Bronze | (ii) Cu + Zn |
| C Amalgam | (iii) Cu + Pb |
| D Brass | (iv) Sn + Pb |
- a. A-iv, B-iii, C-i, D-ii
c. A-ii, B-iii, C-i, D-iv
- b. A-iii, B-iv, C-i, D-ii
d. A-ii, B-i, C-iv, D-iii

38. If milk turns into curd; the pH of milk will

- a. May increase or decrease
c. Decrease
- b. Increase
d. will no be change

39. H^+ ion concentration of four different solutions A, B, C and D are 10^{-11} M , 10^{-4} M , 10^{-1} M and 10^{-7} M , respectively. The correct order of increasing acidity of solutions is

- a. $\text{A} < \text{B} < \text{C} < \text{D}$
c. $\text{A} < \text{D} < \text{B} < \text{C}$
- b. $\text{C} < \text{B} < \text{D} < \text{A}$
d. None of these.

40. Choose the correct pair from the following

- | Elements | Family |
|-----------|----------------------------|
| A. Ne, Ar | (i) Halogens |
| B. Li, K | (ii) Inert gases |
| C. Br, F | (iii) Alkali metals |
| D. Be, Ca | (iv) Alkaline earth metals |
- a. A –(i) , B – (ii), C – (iii), D – (iv)
b. A –(ii) , B – (i), C – (iii), D – (iv)
c. A –(ii) , B – (iii), C – (i), D – (iv)
d. A –(ii) , B – (iv), C – (i), D – (iii)

41. In an experiment demonstrating the evolution of oxygen in hydrilla. Sodium bicarbonate is added to water in the experiment set up. What would happen if all the other conditions are favourable

- a. Amount of oxygen evolved decreases as the availability of CO₂ increases.
b. Amount of oxygen evolved decreases as CO₂ and H₂O is absorbed by sodium bicarbonate.
c. Amount of oxygen evolved increases as the availability of CO₂ increases.
d. Amount of oxygen evolved increases by sodium bicarbonate.

42. Which of the following is a simplified equation of photosynthesis ?

- a. $\text{CO}_2 + 2\text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} (\text{CH}_2\text{O})_n + \text{H}_2\text{O} + \text{O}_2 \uparrow$
b. $\text{CO}_2 + \text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} (\text{CH}_2\text{O})_n + \text{O}_2 \uparrow$
c. $\text{CO}_2 + 2\text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} \text{C}_3\text{H}_6\text{O}_3 + \text{CO}_2 + \text{O}_2 \uparrow$
d. $\text{CO}_2 + \text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} \text{C}_5\text{H}_{10}\text{O}_4 + \text{H}_2\text{O} + \text{O}_2 \uparrow$

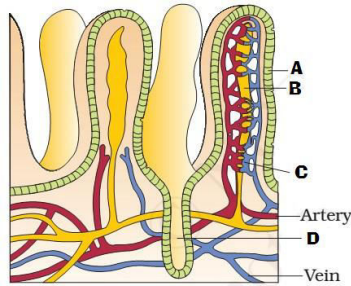
43. Read the following statements and select the correct option

Statement – 1 : The human small intestine is the longest portion in alimentary canal

Statement – 2 : Absorption of digested food requires a very large surface area

- a. Both statements 1 & 2 are correct and statement 2 is the correct explanation of statement 1.
b. Both statements 1 and 2 are incorrect
c. Both statements 1 and 2 are correct but statement 2 is not the correct explanation of statement 1.
d. Statement 1 is correct and statement 2 is incorrect.

44. The diagram given below represents a section of small intestinal mucosa showing villi identify A, b, C and D



- a. A - Cyrpts, B - Lacteal, C - capillaries, D - villi
- b. A - villi, B - Lacteal, C - cyrpts, D - capillaries
- c. A - Lacteal, B - vill, C - capillaries, D - crypts
- d. A - villi, B - Lacteal, C - capillaries, D - cyrpts

45. Which of the following statements are correct?

1. Ca^{+} is necessary for blood coagulation
 2. Coagulation in blood vessel is prevented during normal condition by heparin
 3. Clotting of blood involves changes of fibrinogen to bibrin by thrombin
 4. Blood clotting involves cascading process involving a number of factors present in the active form always
- a. 3 and 4
 - b. 2 and 4
 - c. 1, 3 and 4
 - d. 1 , 2 and 4