ASchools

SCHOLASTIC APTITUDE TEST

(For Students of Class X)

**Time allowed : (90 Minutes)**   **Maximum Marks : 100**

1. An animal cell, a plant cell and a bacterium share the following structural features :
(1) Cell membrane, endoplasmic reticulum, vacuoles
(2) Cell wall, plasma membrane, mitochondria
(3) Cell wall, nucleus, cytoplasm
(4) Plasma membrane, cytoplasm, ribosomes
Ans. **(4)**
Sol. Animal cell, plant cell and bacterium cell have plasma membrane, cytoplasm and ribosomes as common part.

2. Given below are figures of three kinds of muscle fibres.
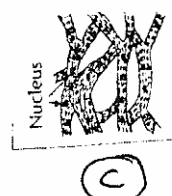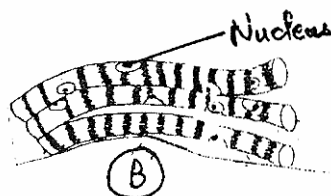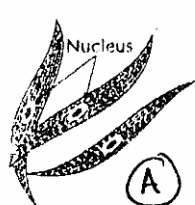
Which one/ones would you find in the grass hopper's legs ?
(1) A only   (2) B only   (3) A and C   (4) B and C
Ans. **(2)**
Sol. Figure B shows striated muscles. They have alternate light and dark bands. They move according to will. These are also known as skeletal muscles.

3. A plant that has well differentiated body, special tissues for transport of water and other substances, but does not have seed or fruits is a(n):
(1) Bryophyte   (2) Angiosperm   (3) Gymnosperm   (4) Pteridophyte
Ans. **(4)**
Sol. Pteridophytes are first vascular plants which do not posses seeds and fruits.

4. Raju was suffering from severe stomach pain and the doctor diagnosed that he was suffering from peptic ulcers and treated him with antibiotics. He was relieved of pain. What could be the reason for peptic ulcers? (1) Reduced secretion of hormones.   (2) Reduced water content.
(3) Growth of Helicobacter pylori.   (4) Excess secretion of enzyme.
Ans. **(3)**
Sol. Bacteria Helicobacter pylori is responsible for peptic ulcers.

5. The average temperature of the Earth remains fairly steady as compared to that of the moon because of the
(1) atmosphere   (2) lithosphere   (3) biosphere.   (4) hydrosphere.
Ans. **(1)**
**Sol.** There is no atmosphere on moon so temperature is variable.

6. In flowers, which one of the following conditions will increase chances of self-pollination?
(1) Pistil is longer than stamens in a flower
(2) Stamens are just above the stigma of a pistil in a flower.
(3) In all flowers of the plant only pistil is present.
(4) In all flowers of the plant only stamens are present.

Ans. **(2)**
Sol. If stamens are just above the stigma of pistil in a flower it increases chances of self pollination.

7. Photosynthesis in an aquatic plant was measured by counting the number of O_2 bubbles coming out of the cut end of the plant. What will happen to O_2 production if you use a pipe blow air from your mouth into water in the be4ker?
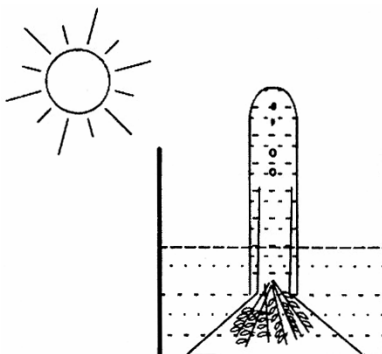
(1) Air from mouth contains O_2 which is being added to the plant. Hence increase in O_2 production.
(2) Air from mouth contains CO_2 which is utilized in photosynthesis. Hence increase in O_2 production.
(3) Bacteria from mouth will infect plant. Hence reduction in O_2 production.
(4) Water is already in contact with air. Hence air from mouth will have no effect.

Ans. **(2)**
Sol. Air from mouth contains CO_2 which is utilized in photosynthesis hence increase in O_2 production.

8. A person with blood group 'A' can donate blood to the persons with blood group 'A' or 'AB' because it
(1) has both 'A' and 'B' antigens.   (2) has only 'A' antigen and 'B' antibodies.
(3) has only 'B' antigen and 'A' antibodies   (4) does not have any antigens and antibodies.

Ans. **(2)**
Sol. A person with blood group 'A' can donate blood to persons with blood group A or 'AB' because it has only 'A' antigen and 'b' antibodies.

9. What would happen to the person if cerebellum of his brain is damaged?
(1) He will lose his memory power.
(2) He will not be able to swallow food properly.
(3) He will be unable to coordinate and stand properly.
(4) He will lose his powers of vision and hearing.

Ans. **(3)**
Sol. Cerebellum co-ordinates muscular activity of the body. It also maintains equilibrium or posture of the body during walking jumping etc.

10. Which of the following statements are correct?
A. Tapeworms are hermaphrodites and undergo self-fertilization.
B. Earthworms are hermaphrodites and undergo self-fertilization.
C. Tapeworms are hermaphrodites but undergo cross-fertilization.
D. Earthworms are hermaphrodites but undergo cross-fertilization
1. A and B   2. B and C   3. C and D   4. D and A

Ans. **(4)**
Sol. Tapeworm and earthworm both are hermaphrodites but in tapeworms self fertilization takes place while earthworm undergoes cross-fertilization.

11-12 A group of red beetles lives on green leaves of a tree. Beetles multiply through sexual reproduction. One day, some green beetles are seen among the red beetles. Green beetles breed to produce green progeny. Crows on the tree eat beetles.

11. Some green beetles appear among the red beetle because
(1) beetles become green by accumulating chlorophyll from the green leaves that they eat.
(2) natural variations occur during sexual reproduction.
(3) red beetles mimic green colour of leaves whenever they see crows.
(4) beetles change colour from red to green with change of season.

Ans. **(2)**
Sol. In this case natural selection is directing evolution in the beetle population. Natural selection brings about improved adaptive relations between organisms and environment by favouring the reproduction and survival of more suited organism to the given environment.

12. The colour composition of beetle population is likely to change in the following manner:
(1) Both red and green beetle survive equally.
(2) Only the red beetle survives.
(3) More red beetles survive than the green.
(4) More green beetles survive than the red

Ans. **(4)**
Sol. The green beetles cannot be seen by crows. So they are not eaten. Increased feeding of red beetles by crow will result in drastic reduction of red beetles and increased number of green beetles in the population.

13. In the following food chain who gets less energy than the tertiary consumer and more than the primary consumer?

Grass ⟶ Grasshopper ⟶ Frog ⟶ Snake ⟶ Eagle

(1) Grasshopper   (2) Frog   (3) Snake   (4) Eagle

Ans. **(Bonus)**
Sol. Question is not correct.

14. Non-degradable and fat soluble pollutant, such as DDT enters the food chain, the pollutant
(1) magnifies in concentration at each trophic level.
(2) 'degrades at first trophic level.
(3) accumulates in the body fat of organism at first trophic level and does not pass to second trophic level.
(4) decreases in concentration at each trophic level.

Ans. **(1)**
Sol. Non-degradable and fat soluble pollutant, such as DDT enters the food chain and magnifies in concentration at each trophic level. It is known as biomagnification.

15. A drop each of two non-corrosive and non-irritating liquids A and B at a temperature of 22°C are placed on the skin. Liquid A gives a more cooling sensation than liquid B. Which of the following can be said about the liquids A and B?
(1) Liquid A has higher boiling point than that of liquid B.
(2) Liquid A has higher latent heat of vaporisation than that of liquid B.
(3) Liquid A has lower latent heat of vaporisation than that of liquid B.
(4) The boiling points of liquid A and B are equal.

Ans. **(3)**
Sol. If liquid A gives more cooling effect then latent heat of vaporisation of liquid A is low.

16. There is a mixture of three solid compounds A, B and C. Out of these compounds A and C are soluble in water and compound C is sublimable also. In what sequence the following techniques can be used for their effective separation?
I. Filtration   II. Sublimation
III. Crystallisation from water extract   IV. Dissolution in water
(1) (II), (I). (IV), (III)   (2) (IV), (I), (II), (III)   (3) (I), (II), (III), (IV)   (4) (II), (IV), (I), (III)

Ans. **(4)**

Sublimation
↓
Dissolution in water
↓
Filtration
↓
Crystallisation

17. Which of the following is a suitable example for illustrating the law of conservation of mass ? (Atomic mass of O = 16; H = 1)
(1) 18g of water is formed by the combination of 16g oxygen with 2g of hydrogen.
(2) 18g of water in liquid state is obtained by heating 18g of ice. '
(3) 18g of water is completely converted into vapour state on heating.
(4) 18g of water freezes at 4°C to give same mass of ice.

Ans. **(1)**

Sol. $H_2 + \dfrac{1}{2}O_2 \rightarrow H_2O$ [Law of conservation of mass is valid for chemical change only].
2gm   16gm   18gm

18. An element X has 7 electrons in its L shell. What is true about the element X?
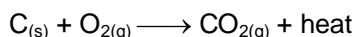I. It belongs to period 9 of modern periodic table.
II. Its atom contains 9 protons.'
III. It has a valency of 7.
IV. Its atoms can accept an electron to acquire noble gas configuration. -.
(1) (I) and (II)   (2) (II) and (III)   (3) (III) and (IV)   (4) (II) and (IV)

Ans. **(4)**
Sol. Element X having atomic number 9, contain 9 protons and its valence shell contains 7 electrons, to acquire noble gas configuration it accept one electron.

19. The reaction between carbon and oxygen can be represented as
$C_{(s)} + O_{2(g)} \longrightarrow CO_{2(g)} + heat$
In which of the following type(s), the above reaction can be classified?
I. Combustion reaction   II. Displacement reaction
III. Endothermic reaction   IV. Combination reaction
(1) (I) and (III)   (2) (I), (III) and (IV)   (3) (I) and (IV)   (4) (I) only

Ans. **(3)**
Sol. $C_{(s)} + O_{2\,(g)} \rightarrow CO_{2\,(g)} + heat.$
It is combination and combustion reaction.

20. A metal carbonate X on treatment with a mineral acid liberates a gas which when passed through aqueous solution of a substance Y gives back X. The substance Y on reaction with the gas obtained at anode during electrolysis of brine gives a compound Z which can decolorise coloured fabrics. The compounds X, Y and Z respectively are
(1) $CaCO_3$, $Ca(OH)_2$, $CaOCl_2$ (2) $Ca(OH)_2$, CaO, $CaOCl_2$
(3) $CaCO_3$, $CaOCl_2$, $Ca(OH)_2$ (4) $Ca(OH)_2$, $CaCO_3$, $CaOCl_2$

Ans. **(1)**
Sol. $CaCO_3 + HCl \rightarrow CaCl_2 + H_2O + CO_2^{-}$
     (x)
$Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$
     (y)
$Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2$
                              (z)
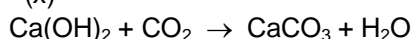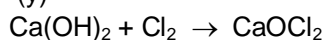
21. A salt can be between produced by reaction

A. a weak acid and weak base
B. metal oxide and water
C. metal and a mineral acid
D. metal oxide and a mineral acid
(1) A, B and C   (2) B,C and D   (3) C, D and A   (4) D, A and B

Ans. **(3)**
Sol. Weak Acid + Weak Base $\rightarrow$ Salt + Water
Metal + Mineral Acid $\rightarrow$ Salt + Hydrogen
Metal Oxide + Mineral Acid $\rightarrow$ Salt + Water

22. Which of the following is true about the two statements?
Statement I : Reactivity of aluminium decreases when it is dipped in nitric acid.
Statement II A protective layer of aluminium nitrate is formed when aluminium is dipped in nitric acid.
(1) I is correct but II is incorrect
(2) I is incorrect but II is correct.
(3) Both the statements are correct and II is also the correct explanation of I
(4) Both the statements are correct but II is not correct explanation of I

Ans. **(1)**
Sol. When Al is dipped in HNO_3, it forms layer of Al_2O_3 which decrease the reactivity of Al.

23. A silvery white metal X reacts with water at room temperature to produce a water soluble compound Y and a colourless gas Z. The reactions is highly exothermic and the Z catches fire immediately during the reaction. The solution of Y in water on reacting with stoichiometric amount of dilute solution of hydrochloric acid gives a solution of pH = 7.0. The compounds X, Y and Z respectively are :
(1) Al, $Al(OH)_3$ and H_2 (2) Ag, AgOH and H_2 (3) K, KCl and H_2 (4) Na, NaOH and H_2

Ans. **(4)**
Sol. $Na + H_2O \rightarrow NaOH + H_2 + Heat$
   (x)   (y)   (z)
$NaOH + HCl \rightarrow NaCl + H_2O$
                    (pH = 7)
                    (neutral)

24. A compound X is obtained by the reaction of alkaline $KMnO_3$ with another compound Y followed by acidification. Compound X also reacts with compound Y in presence of few drops of H_2SO_4 to form a sweet smelling compound Z. The compound X Y and Z are respectively.
(1) Ethanol, Ethene, Ethanoic acid
(2) Ethanoic acid, Ethanol, Ethylethanoate
(3) Ethanoic Acid, Ethanal, Ethene
(4) Ethanol, Ethanoic Acid, Sodium Ethanoate
Ans. **(2)**
Sol. $C_2H_5OH \xrightarrow[\text{KMnO}_4]{\text{Alkaline}} CH_3COOH$
     (y)   (x)

$CH_3COOH + C_2H_5OH \xrightarrow{\text{H}_2\text{SO}_4} CH_3COOC_2H_5$
 (x)   (y)   (z)

25. Which of the following pairs of compounds of carbon will undergo combustion as well as addition reactions.
(1) CH_4 and C_2H_6 (2) C_2H_6O and C_3H_8O (3) $C_2H_4O_2$ and C_3H_6O (4) C_2H_2 and C_3H_6
Ans. **(4)**
Sol. C_2H_2 & C_3H_6 are unsaturated hydrocarbon so they can give combustion and addition reaction both.

26. An element X combines with hydrogen to form a compound XH_3. The element X is placed on the right side of the periodic table. What is true about the element X?
(A) Has valence electrons   (B) Is a metal and is solid
(C) Is a non-metal and is a gas   (D) Has a 5 valence electrons
(E) XH_3 reacts with water to form a basic compound
(1) A, B and C   (2) B, C and D   (3) C, D and E   (4) E, A and B
Ans. **(3)**
Sol. X is N because it is placed on the right side of the periodic table & compound is NH_3. X is a non metal and valence e^{-1}s are 5 &
$NH_3 + H_2O \rightarrow NH_4OH$ (Base)

27. An element X (atomic number 12) reacts with another element Y (atomic number 17) to form a compound Z. Which of the following statements are true regarding this compound?
I. Molecular formula of Z is XY_2
II. It is soluble in water
III. X and Y are joined by sharing of electrons
IV. It would conduct electricity in the molten state.
(1) (II) and (III)   (2) (I) and (III)   (3) (I), (III) and (IV)   (4) (II) and (IV)
Ans. **(4)**
Sol. X = Mg
Y = Cl
Z = $MgCl_2$ (XY_2)
$MgCl_2$ is an ionic compound & it conduct electricity in the molten state.

28. A ship sends a sonar wave to the sea bed which is flat and measured several times over a large area, One day the reflected sound wave takes longer time than in previous measurements. The possible reason is:
(1) the frequency of the sonar wave, generated by the equipment is lower than previous measurements.
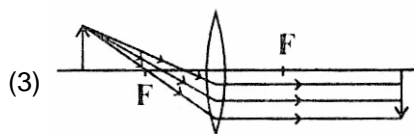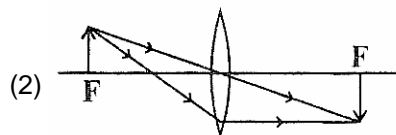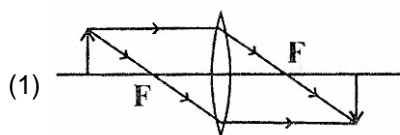(2) there is a solid object of large size in the path of sonar wave.
(3) there is a huge air bubble in the path of sonar wave.
(4) the loudness of the sonar wave, generated by the equipment is lower than previous measurement.
Ans. **(3)**
Sol. Speed of sonar wave decreases in air and so it takes longer time.

29. Which of the following ray diagram is correct ?

Ans. **(1)**
Sol. Incident ray parallel to principal axis passes through the focus and incident ray passing through focus emerges parallel to principal axis.

30. A concave lens always gives a virtual image. In optical lenses worn by humans which of the following statements is true?
(1) The lens can never be concave.
(2) In some cases the lens can be concave if the focal length is much larger than 2.5 cm.
(3) All focal length concave lenses are possible.
(4) All focal length convex lenses are possible.

Ans. **(2)**
Sol. Image of a far object must be produced by the concave lens at a distance more than 25 cm from the eye. So all focal lengths of concave lens are not possible.

31. A geo-stationary satellite is orbiting around earth at height of 30,000 km in circular orbit. The radius of the earth is taken as 6000 km. The geo-stationary satellite comes back to its position after one revolution in exactly 24 hours. Let the acceleration due to gravity (g) be 10 m/s^2 and mass of satellite be 1000 kg; calculate the work done in 12 hours when moving under gravitational force.
(1) $3.6\pi \times 10^{14}$ J   (2) $2\pi \times 7.2\pi \times 10^{14}$ J   (3) $1.8\pi \times 10^{14}$ J   (4) 0 J

Ans. **(4)**
Sol. Work done under centripetal force is always zero because force & displacement are perpendicular to each other.

32. Consider a simple circuit containing a battery and three identical incandescent bulbs A, B and C. Bulb A is wired in parallel with bulb B and this combination is wired in series with bulb C. What would happen to the brightness of the other two bulbs if bulb A were to burn out?
(1) Only bulb B would get brighter.
(2) Both A and B would get brighter.
(3) Bulb B would get brighter and bulb C would get dimmer.
(4) There would be no change in the brightness of either bulb B or bulb C

Ans. **(3)**
Sol.
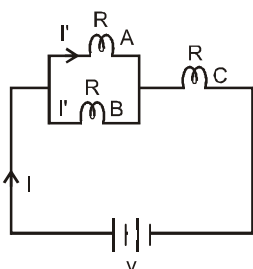
$I = \dfrac{2V}{3R}$

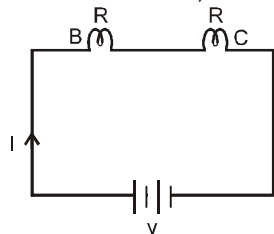$\Rightarrow I' = \dfrac{I'}{2} = \dfrac{V}{3R}$

$\therefore$ Power developed in A & B

$= (I')^2 R = \dfrac{V^2}{9R^2} \times R = \dfrac{V^2}{9R}$

Power developed in

$$C = I^2R = \frac{4v^2}{9R^2} \times R = \frac{4V^2}{9R}$$
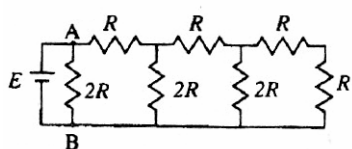
When A is burnt, circuit is

$$I = \frac{v}{2R}$$

∴ Power developed in

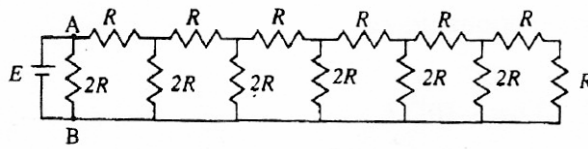$$B \text{ or } C = I^2R = \frac{v^2}{4R^2} \times R = \frac{v^2}{4R}$$
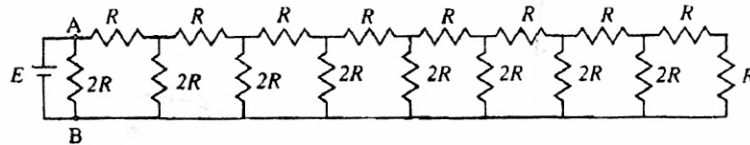
∴ Power of B increases

Power of C decreases

33. Three different circuits (I. II and III) are constructed using identical batteries and resistors of R and 2R ohm. What can be said about current I in arm AB of each circuit?

(I)

(II)

(III)

(1) $I_{II} < I_{I} < I_{III}$ (2) $I_{I} < I_{II} < I_{III}$ (3) $I_{I} = I_{II} = I_{III}$ (4) $I_{I} > I_{II} = I_{III}$

Ans. **(3)**

Sol. Currents in arm AB in all the circuits are same and is equal to $\frac{E}{2R}$

34. A uranium nucleus at rest decays into a thorium nucleus and a helium nucleus, as shown below. Which of the following is true?

$$^{235}_{92}U \rightarrow\; ^{231}_{90}Th + ^{4}_{2}He$$
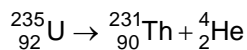
(1) Each decay product has the same kinetic energy.

(2) The decay products tend to go in the same direction.

(3) The thorium nucleus has more momentum than the helium nucleus.

(4) The helium nucleus has more kinetic energy than the thorium nucleus.

Ans. **(4)**
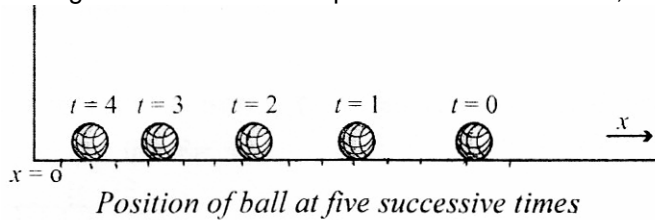
Sol. Law of conservation of momentum is applicable.

∴ $(MV)_{Th} = -(mv)_{He}$

⇒ $|(MV)_{Th}| = |(mv)_{He}| = p(say)$

∴ $(KE)_{Th} = \frac{p^2}{2M}$ and $(KE)_{He} = \frac{p^2}{2m}$

Obviously, $(KE)_{Th} < (KE)_{He}$ (∵ M > m)

35. The figure below shows the position of a ball at t = 0, t = 1s, t = 2s, t = 3s and t = 4s :


Position of ball at five successive times

Which of the graph below is a possible graph of the position x(t) ?

(1)   (2)   (3)   (4)
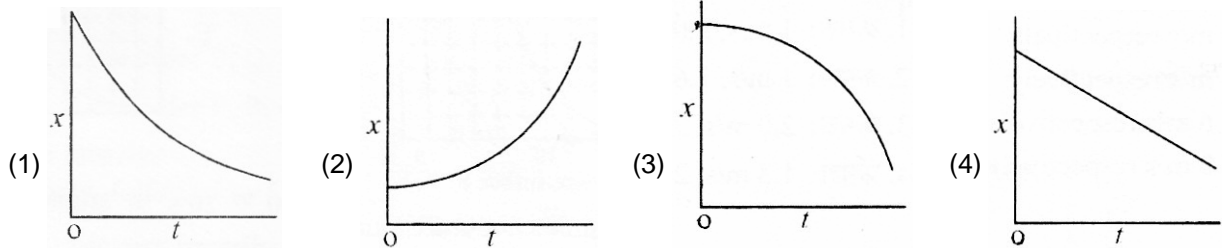
Ans. **(1)**

Sol. The displacement of the ball decreases more rapidly initially and as time passes by, rate of decrease in displacement reduces.

36. The graph shows position as a function of time for two trains A and B running on parallel tracks. For times greater than t = 0, which of the following statement is true ?
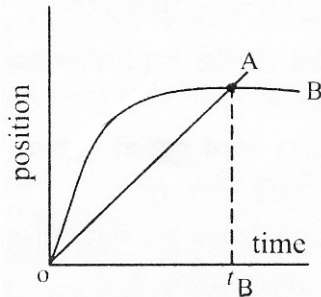

(1) At time t_B, both trains have the same velocity.
(2) Both trains speed up all the time
(3) Both trains may have the same velocity at some time earlier than t_B.
(4) Graph indicates that both trains have the same acceleration at a given time.

Ans. **(3)**

Sol. As evident from the graph, slope of tangent PQ and slope of OA are equal. Hence B and A have same velocity at t_1 (which is less than t_B).
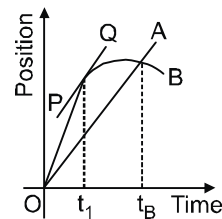
37. The figure shown below depicts the distance travelled by a body as a function of time.
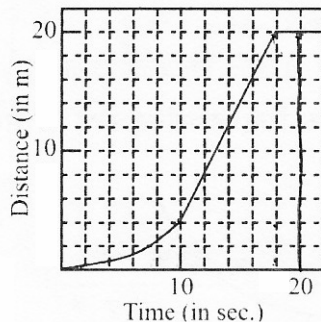
The average speed and maximum speed between 0 and 20 s are :
(1) 1 m/s, 2.0 m/s respectively   (2) 1 m/s, 1.6 m/s respectively
(3) 2.0 m/s, 2.6 m/s respectively   (4) 1.3 m/s, 2.0 m/s respectively

Ans. **(1)**

Sol. Average speed $= \dfrac{20}{20} = 1$ m/s

Maximum speed is attained between t = 10 s to t = 20 s

$\therefore$ Maximum speed $= \dfrac{16}{8} = 2$ m/s

38. A hypothetical planet has density ρ. radius R. and surface gravitational acceleration g. If the radius of the planet were doubled, but the planetary density stayed the same, the acceleration due to gravity at the planet's surface would be :

(1) 4g   (2) 2g   (3) g   (4) g/2

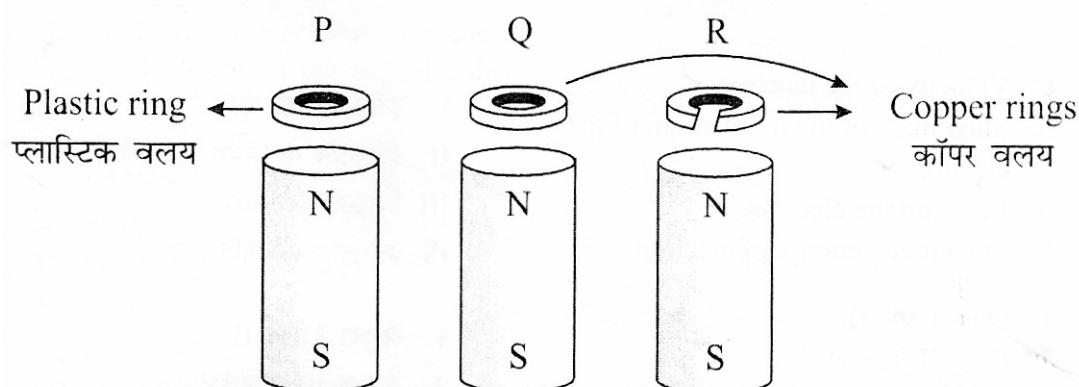**Ans.** **(2)**

Sol. Ist **case :**

$$g = \frac{G\left(\dfrac{4}{3}\pi R^3 \rho\right)}{R^2} = \frac{4}{3}\pi GR\rho$$

IInd **case :**

$$g' = \frac{G\left(\dfrac{4}{3}\pi (2R)^3 \rho\right)}{(2R)} = 2\left[\frac{4}{3}\pi RG\rho\right]$$

$\therefore$ g' = 2g

39. Three rings P, Q and R are dropped at the same time over identical hollow magnets as shown below :

Which of the following describes the order in which the ring P. Q and R reach the bottom of the magnet?

(1) They arrive in the order, P, Q, R.

(2) They arrive in the order P, R, Q

(3) Rings P and R arrive simultaneously, followed by Q.

(4) Rings Q and R arrive simultaneously, followed by P.

Ans. **(3)**

Sol. Plastic ring P and copper ring R will not suffer any repulsive force. So, they will fall together first.

40. An electron moving with uniform velocity in x direction enters a region of uniform magnetic field along y direction. Which of the following physical quantity(ies) is (are) non-zero and remain constant ?
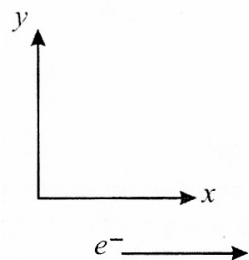
(I) Velocity of the electron

(II) Magnitude of the momentum of the electron

(III) Force on the electron

(IV) The kinetic energy of electron

(1) Only I and II   (2) Only III and IV   (3) All four   (4) Only II and IV

Ans. **(4)**
Sol. Velocity and force changes due to change in direction but magnitude of momentum and KE of electron remain constant as speed is constant.

41. An open box is made from a square lamina of side 12cm, by cutting equal squares at the corners and folding up the remaining flaps. The volume of this box cannot be
(1) 115 c.c.   (2) 120 c.c.   (3) 125 c.c.   (4) 130 c.c.
Ans. **(4)**
Sol.   Volume of box $V = (12 - 2x)^2 x$
$$V = (144 + 4x^2 - 48x)x$$
$$V = 4x^3 - 48x^2 + 144x$$
for maximum value
$$\frac{dv}{dx} = 0$$
$$\frac{d(4x^3 - 48x^2 + 144x)}{dx} = 0$$
$$12x^2 - 96x + 144 = 0$$
$$X^2 - 8x + 12 = 0$$
$\Rightarrow$ $x = 2$ or 6
                      $x \neq 6$
so $x = 2$
for $x = 2$
                  $V = (12 - 2 \times 2)^2 \times 2$
              $V_{max} = 128$
So $V \neq 130$ c.c.

42. A has a pair of triangles corresponding sides proportional, and B has a pair of pentagons with corresponding sides proportional,
$S_1 \equiv$ A's triangles must be similar
$S_2 \equiv$ B's pentagons must be similar
Which of the following statement is correct?
(1) S_1 is true but S_2 is not true   (2) S_2 is true, but S_1 is not ture
(3) Both S_1 and S_2 are true   (4) Neither S_1 nor S_2 is true.
Ans. **(1)**
Sol. SIMILAR POLYGON
Definition-Two polygons are said to be similar to each other ,if
(1) their corresponding angles are equal, and
(2) the lengths of their corresponding sides are proportional
      It should be noted that for the similarity of polygons with more than three sides, the two conditions given above in the definition are independent of each other ,that is either of the two condition without the other is not sufficient for polygons with more than three sides to be similar. In other words , if the corresponding angles of two polygons are equal but lengths of their corresponding sides are not proportional , the polygon need not be similar. Similarly, , if the corresponding angles of two polygons are not equal but lengths of their corresponding sides are proportional , the polygon need not be similar.
      Triangles are special type of polygons, in case of triangles if either of the two conditions holds, then the other holds automatically.

43. $\triangle ABC$ is an equilateral triangle of side $2\sqrt{3}$ cms. P is any point in the interior of $\triangle ABC$. If x, y, z are the distances of P from the sides of the triangle, then $x + y + z =$
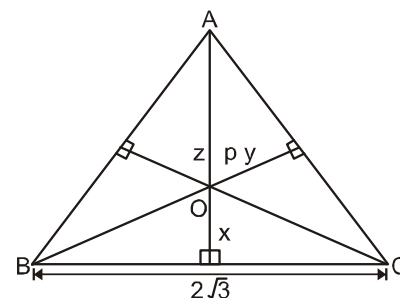(1) $2 + \sqrt{3}$ cms   (2) 5 cms   (3) 3 cms   (4) 4 cms
Ans. **(3)**
Sol. $Ar(\triangle ABC) = Ar(\triangle AOB + \triangle AOC + \triangle BOC)$

$$\frac{\left(2\sqrt{3}\right)^3 \sqrt{3}}{4} = \frac{1}{2}x.2\sqrt{3} + \frac{1}{2}y.2\sqrt{3} + \frac{1}{2}z.2\sqrt{3}$$

$$\frac{12\sqrt{3}}{4} = \frac{1}{2}2\sqrt{3}[x + y + z]$$

$$3\sqrt{3} = \sqrt{3}[x + y + z]$$

$$3 = x + y + z$$

44. Which of the following numbers is the fourth power of a natural number?
(1) 6765201   (2) 6765206   (3) 6765207   (4) 6765209

Ans. **(1)**

Sol. $6765201 = (51)^4$

45. The square of an odd integer must be of the form :
(1) 6n + 1   (2) 6n + 3
(3) 8n + 1   (4) 4n + 1 but may not be 8n + 1
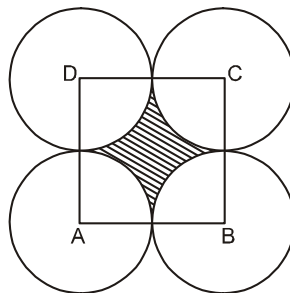
Ans. **(3)**

Sol. Let the odd no. will be of the form 4q + 1 or 4q + 3 then
$$(4q + 1)^2 = 16q^2 + 1 + 8q = 8(2q^2 + q) + 1$$
$$= 8n + 1$$
Or $(4q + 3)^2 = 16q^2 + 9 + 24q = 8[2q^2 + 3q + 1] + 1$
$$= 8n + 1$$

46. ABCD is a square with side a. With centres A, B, C and D four circles are drawn such that each circle touches externally two of the remaining three circles. Let δ be the area of the region in the interior of the square and exterior of the circles. Then the maximum value of δ is :

(1) $a^2(1 - \pi)$ (2) $a^2\left(\dfrac{4 - \pi}{4}\right)$ (3) $a^2(\pi - 1)$ (4) $\dfrac{\pi a^2}{4}$

Ans. **(2)**

Sol.   Area of shaded region $\delta = a^2 - \dfrac{\pi a^2}{4}$.

$$= a^2\left[1 - \dfrac{\pi}{4}\right]$$

$$= a^2\left[\dfrac{4 - \pi}{4}\right]$$

47. The value of tan 1° tan 2° tan 3° …. tan89° is :
(1) 0   (2) 1   (3) 2   (4)

Ans. **(2)**

Sol. tan 1° tan 2° ………… tan 89°
= tan 1° tan 2° ………. cot 2° cot 1°
= 1

48. $ax^2 + bx + c = 0$, where a, b, c are real, has real roots if :
(1) a, b, c are integers   (2) $b^2 > 3ac$ (3) ac > 0 and b is zero   (4) c = 0

Ans. **(4)**

Sol. $ax^2 + bx + c = 0$
for real roots
                  $b^2 - 4ac \geq 0$
if $c = 0$
then $b^2 \geq 0$
this is always true.

49. An open box A is made from a square piece of tin by cutting equal squares S at the corners and folding up the remaining flaps. Another open box B is made similarly using one of the squares S. If U and V are the volumes of A and B respectively, then which of the following is not possible ?
(1) U > V   (2) V > U
(3) U = V   (4) Minimum value of U > maximum value of V.

Ans. **(4)**

Sol. Let the side of tin = a
So, $U = (a - 2x)^2 x$
Where x is the side of square which have been cut.
Similarly $V = (x - 2y)^2 y$
where y is the side of square which have been cut.

Minimum value of U = 0
Minimum value of V = 0
So, U > V and V > U and U = V are possible
But minimum value of U = 0
It cannot be greater than maximum value of V.

50. Which of the following statements holds always ?
(1) Every rectangle is a square.   (2) Every parallelogram is a trapezium
(3) Every rhombus is a square   (4) Every parallelogram is a rectangle
Ans. **(2)**
Sol. Every parallelogram is a trapezium.

51. Which of the following polygons are uniquely determined when all the sides are give ?
(1) Quadrilateral   (2) Triangle   (3) Pentagon   (4) Haxagon
Ans. **(2)**
Sol. Triangle is uniquely determined when all sides are given.

52. There are several human beings and several dogs in a room. One tenth of the humans have lost a leg. The total numbers of feet are 77. Then the number of dogs is :
(1) not determinable due to insufficient data   (2) 4
(3) 5   (4) 6
Ans. **(3)**
Sol.   Let the no. of men = x
           No. of dogs = y

So, $\dfrac{x}{10} + \dfrac{2 \cdot (9x)}{10} + 4y = 77$
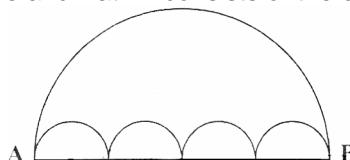
$\dfrac{19x}{10} + 4y = 77$

$X = \dfrac{770 - 40y}{19}$

For   y = 5, x = 30
So,   No of dogs = 5.

53. All the arcs in the following diagram are semi-circles. This diagram shows two paths connecting A to B. Path I is the single large semi-circle and Path II consists of the chain of small semi- circles.

(1) Path I is longer than path II
(2) Path I of the same length of Path II
(3) Path I is shorter than Path II
(4) Path I is of the same length as Path II. Only if the number of semi circles is not more than 4
Ans. **(2)**
Sol. Path I is of same lengths as path II. It will be independent of no of semi circles.

54. One integer is chosen out of I, 2, 3, …., 100. What is the probability that it is neither divisible by 4 nor by 6
(1) 0.59   (2) 0.67   (3) 0.41   (4) 0.33
Ans. **(2)**
Sol. Total no. which are divisible by 4 and 6 will be 33

So   Required probability = $\dfrac{100 - 33}{100} = .67$

55. $\sqrt{(a-b)^2} + \sqrt{(b-a)^2}$ is :
(1) Always zero   (2) Never zero
(3) Positive if and only if a > b   (4) Positive only if a ≠ b
Ans. **(4)**
Sol. $\sqrt{(a-b)^2} + \sqrt{(b-a)^2}$
|a – b| + |b – a|
This will be positive if a ≠ b.

56. A solid metal sphere of surface area S_1 is melted and recast into a number of smaller spheres. S_2 is the sum of the surface areas of all the smaller spheres. Then
(1) $S_1 > S_2$
(2) $S_2 > S_1$
(3) $S_1 = S_2$
(4) $S_1 = S_2$ only if all the smaller spheres of equal radii

Ans. **(2)**
Sol. Total surface area of all spheres always increases when A solid metal sphere is melted and recantation a number of smaller spheres.

57. Which of the following is an irrational number?
(1) $\sqrt{41616}$
(2) 23.232323
(3) $\dfrac{(1+\sqrt{3})^3 - (1-\sqrt{3})^3}{\sqrt{3}}$
(4) 23.10100100010000…

Ans. **(4)**
Sol. 23.10100100010000… will be irrational number because it's non terminating non repeating.

58. Re. 1 and Rs 5 coins are available (as many required). Find the smallest payment which cannot be made by these coins, if not more than 5 coins are allowed.
(1) 3   (2) 12   (3) 14   (4) 18

Ans. **(3)**
Sol. 14 is the required number because
$$14 = 5 + 5 + 1 + 1 + 1 + 1 = 6 \text{ coins are required.}$$

59. Median of a data number which has number of observations below and above it. The median set is a an equal below and of the data
1, 9, 4, 3, 7, 6, 8, 8, 12, 15 is
(1) 7.5
(2) 7
(3) 8
(4) Any number between 7 and 8

Ans. **(4)**
Sol. Median of 1, 3, 4, 6, 7, 8, 8, 9, 12, 15
Will be any number between 7 and 8 (as per the definition of median given in the question).

60. Suppose you walk from home to the bus stand at 4 km/h and immediately return at x km/h. If the average speed is 6 km/h then x is
(1) 8 km/h
(2) 10 km/h
(3) 12 km/h
(4) cannot be determined unless the distance from home to bus stand is known.

Ans. **(3)**
Sol.
$$6 = \frac{2S}{\dfrac{S}{4} + \dfrac{S}{x}}$$
$$\Rightarrow \quad 3 = \frac{4x}{x+4}$$
$$\Rightarrow \quad 3x + 12 = 4x$$
$$\Rightarrow \quad x = 12 \text{ km/h}$$

61. From about 13th century to the time of the French Revolution sumptuary laws were expected to be followed strictly to :
(1) Regulate the behaviour of the royalty.
(2) Regulate the income of people by social rank
(3) Control the behaviour of those considered social inferiors
(4) Provide religious sanctity to social behaviour

Ans. **(3)**
Sol. From about 1294 to the time of the French Revolution in 1789, the people of France were expected to strictly follow what were known as "Sumptuary Laws". The laws tried to control the behaviour of those considered social inferiors, preventing them from wearing certain clothes, consuming certain foods and beverages and hunting game in certain areas.

62. Choose the correct response from the given options.
On 3rd March 1933 the famous Enabling Act was passed to :
(a) establish dictatorship in Germany.
(b) give Hitler the power to rule by decree
(c) ban all trade unions
(d) ban all political parties and their affiliates
(1) Only a and b are correct   (2) only c and d are correct
(3) a, b and c are correct   (4) only d is correct

Ans. **(1)**
Sol. On 3rd March 1933, the Famous enabling Act was passed. This Act established dictatorship in Germany. It gave Hitler all powers to sideline Parliament and rule by decree. All political parties and trade unions were banned except for the Nazi party and its affiliates. The state established complete control over the economy, media, army and Judiciary.

63. Enclosures in England were seen as:
(1) hindrance to agricultural expansion and crop rotation.
(2) hindrance to commercialization of agriculture.
(3) necessary to make long-term investment on land, agriculture and to plan crop rotation to improve the soil.
(4) necessary to protect the interests of those who depended on the commons for their survival.

Ans. **(3)**
Sol. Enclosures in England were seen as necessary to make long term investments on land and plan crop rotations to improve the soil. Enclosures also allowed the richer landowners to expand the land under their control and produce more for the market.

64. The Balkans, which was a serious source of nationalist tension in Europe after 1871, was a region comprising of:
(1) Romania, Germany, Poland, Bulgaria.
(2) Romania, Prussia, Greece, Croatia and Serbia.
(3) Serbia, Austria, Bulgaria, Slovakia and Poland.
(4) Serbia, Bulgaria, Greece, Cro4tia, Romania.

Ans. **(4)**
Sol. The most serious source of nationalist tension in Europe after 1871 was the area called the Balkans was a region of geographical and ethnic variation comprising modern day Romania, Bulgaria, Albania, Greece, Mecedonia, Croatia, Bosnia – Herzegovina, Slovenia, Serbia and Montenegro whose inhabitants were broadly known as the Slavs.

65. What was Rinderpest?
(1) A disease of cattle plagues that spread in Africa in the 1890s.
(2) Bubonic plague which spread in the region of Maharashtra in the l890s.
(3) A type of cholera that spread in Assarn in the I 890s.
(4) A devastating bird disease that was imported to Italy from British Asia through chicken meat.

Ans. **(1)**
Sol. In Africa, in the 1890s, a fast spreading disease of cattle plague or rinderpest had a terrifying impact on people's livelihoods and the local economy.

66. Which of the following is a correct match ?
(1) Rashsundari Debi   – Istri Dharma Vichar
(2) Ram Chadda   – Amar Jiban
(3) Kashibaba   – Chote Aur Bade ka Sawaal
(4) Sudarshan Chakra   – Gulamgiri

Ans. **(3)**
Sol. "Istri Dharam Vichar" wrote by Shri Ram Chaddha, Kashibaba, a mill worker of Kanpur published 'Chote Aur Bada ka Sawal". Rassundari Devi, wrote a story of her life, 'Amar Jiban' (My life), that was published in 1876. Jyotiba Phula wrote Gulamgiri, it was based on the caste system.

67. Printing created possibilities of wider circulation of ideas. Who of the following hailed printing as the ultimate gift of God?
(1) Martin Luther   (2) Menocchio
(3) Roman Catholic Church   (4) Gutenberg

Ans. **(1)**
Sol. Deeply grateful to print, Martin Luther said, "Printing is the enacted gift of God and the greatest one."

68. The forest Act of 1878 divided forests into :
   (1) reserved and protected forests
   (2) protected and village forests
   (3) bio-sphere reserves and wild life sanctuaries
   (4) reserved, protected and village forests
Ans. **(4)**
Sol. After the Forest Act was enacted in 1865, it was emended twice, once in 1878 and then in 1927. The 1878 Act divided forests into three categories reserved, protected and village forests.

69. Consider the following statements and identify the correct response from the options given thereafter :
   Statement I : Hitler said 'In may state the mother is the most important citizen'
   Statement II: In Nazi Germany while boys were taught to be aggressive, muscular and steel hearted; girls were told that they had to become good mothers.
   (1) Statement I is true but statement II is false.
   (2) Both statement I and statement II are true but statement II is not the correct explanation of statement I.
   (3) Both the statements are False.
   (4) Both statement I and statement II are true and statement II is the correct explanation of statement I.
Ans. **(4)**
Sol. In 1933 Hitler said: 'In my state the mother is the most important citizen.' Children in Nazi Germany were repeatedly told that women were radically different from men. The fight for equal rights for men and women that had become part of democratic struggles everywhere was wrong and it would destroy society. While boys were taught to be aggressive, masculine and steel hearted, girls were told that they had to become good mothers and rear pure-blooded Aryan children.

70. Consider the following statements and choose the correct response from the options given thereafter:
   Statement I: The major cricket tournament of colonial India, the 'Quadrangular' did not represent regions but religious communities.
   Statement II: The victory of the 'Hindus' in the 'Quadrangular' cricket tournament in 1923 was equated by a cricket fan with Gandhiji's war on 'untouchability'.
   (1) Statement I is true but statement II is false.
   (2) Statement I is false but statement II is true
   (3) Both statement I and statement II are true and II is correct explanation of statement I
   (4) Both statement I and statement II are true but statement II is not the correct explanation of statement I.
Ans. **(4)**
Sol. This history of gymkhana cricket led to first-class cricket being organised on communal and racial lines. 'The Hindus' brilliant victory was due more to the judicious and bold step of the Hindu Gymkhana in appointing Mr Vithal, brother of Mr Baloo – premier bowler of India – who is a member of the Untouchable Class to captain the Hindu team. The moral that can be safely drawn from the Hindus' magnificent victory is that removal of Untouchability would lead to swaraj – which is the prophecy of the Mahatma.'

71. Match the following columns :

Column A		Column B	
(I)	Ambedkar established the Depressed Classes Association	(A)	December, 1929
(II)	Gandhiji began the Civil Disobedience Movement	(B)	August, 1930
(III)	Gandhiji ended the Civil Disobedience Movement	(C)	March, 1930
(IV)	Congress adopted the demand for 'Purna Swaraj'	(D)	March, 1931

   (1) (I) – (C), (II) – (D), (III) – (B), (IV) – (A)
   (2) (I) – (B), (II) – (C), (III)– (D), (IV) – (A)
   (3) (I) – (C), (II) – (A), (III) – (B), (IV) – (D)
   (4) (I) – (D), (II) – (C), (III) – (B), (IV) – (A)
Ans. **(2)**
Sol. Ambedkar established the Depressed Classes Association in August 1930. Gandhiji began the Civil Disobedience movement in March 1930 and ended in March 1931. In December 1929, Lahore congress adopts the demands for 'Purna Swaraj'.

72. Consider the following statements and choose the correct response from the options given thereafter:
   Statement I: The Act of Union 1707 led to the formation of the "United Kingdom of Great Britain".
   Statement II: The British parliament was henceforth dominated by its English members.
   (1) Both statement I and statement II are false
   (2) Both statement I and statement II are true and statement II is the result of statement I.
   (3) Statement I is true but statement II is false
   (4) Both statement I and statement II are true but statement II is not a result of statement I.
Ans. **(2)**
Sol. Both statements are correct.
   The Act of union 1707, led the formation of the United Kingdom of Great Britain.

73. Consider the following statements and choose the correct response from the options given thereafter:
Statement I: Traders and travellers introduced new crops to the land they travelled.
Statement II: Noodles most likely travelled from China through Arab traders to Sicily.
Statement III: Potato reached the West through travellers and became the staple diet of the poor.
(1) Statement I and statement III are true.
(2) Statement II and statement III are ture.
(3) All three statements are true
(4) Statement I and statement II are true.

Ans. **(4)**
Sol. Both statements are true.
Traders and travellers introduced new crops to the land they travelled and Noodles most likely travelled from China through Arab traders to Sicily.

74. **Assertion** (A): Gandhijis idea of satyagraha emphasised on the power of truth and the need to search for truth.
Reasoning (R): Gandhiji believed that a satyagrahi could win the battle by appealing to the conscience of the oppressor.
Select the correct option from the given alternatives.
(1) A is true and R is false.
(2) Both A and R are true but R not the correct explanation of A.
(3) Both A and R are true and R is the correct explanation of A.
(4) Both A and R are false.

Ans. **(3)**
Sol. According Gandhi ji, with out seeking vengeance or being aggressive, a Satyagrahi could win the battle through non-violence. This could be done by appealing to the conscience of the oppressor.

75. **Assertion** (A): The Civil Disobedience Movement was different from the Non-cooperation Movement.
Reason (R): People in the Civil Disobedience Movement were asked not only to refuse cooperation with the British but also to break colonial laws. Select the correct option from the given alternatives. —
(1) Both A and R are true but R is not the correct explanation of A.
(2) Both A and R are false.
(3) A is false but R is true.
(4) Both A and Rare true and R is the correct explanation of A.

Ans. **(4)**
Sol. Both statements are true
On 6th April Gandhi ji and his followers reached Dandi, and ceremonially violated the law, manufacturing salt by boiling sea water. This marked the beginning of the Civil Disobedience movement.

76. **Assertion (A) :** Coal is a fossil fuel.
Reason(R) : It is formed due to compression of inorganic material over millions of years.
Select the correct option from the given alternatives.
(1) Both (A) and (R) are true, and (R) explain (A)
(2) Both (A) and (R) are true, but (R) does not explain (A)
(3) (A) is true and (R) is false
(4) (A) is false and (R) is true

Ans. **(3)**
Sol. In India, Coal is the most abundantly available fossil fuel. It is formed due to compression of plant material over millions of years.

77. **Assertion (A) :** The sun rises in Arunachal Pradesh about two hours before Gujarat.
Reason(R) : Arunachal Pradesh is on a higher latitude than Gujarat. Select the correct option from the given alternatives.
(1) Both (A) and (R) are true, and (R) explain (A)
(2) Both (A) and (R), are true, but (R) does not explain (A)
(3) (A) is true and (R) is false
(4) (A) is false and (R) is true

Ans. **(2)**
Sol. From Gujarat to Arunachal Pradesh there is a time lag of 2 hours. The latitudinal extent influences the duration of the day and night, as one moves from south to north. Arunachal Pradesh lies on the easternmost longitude hence sun rises first in the state.

78. **Assertion (A)** : In India, east coast has more seaports than the west coast.
Reason(R) : The east coast is broader and is an example of emergent coast. Select the correct option from the given alternatives.
(1) Both (A) and (R) are true, and (R) explain (A)
(2) Both (A) and (R) are true, but (R) does not explain (A)
(3) (A) is true and (R) is false
(4) (A) is false and (R) is true

Ans. **(1)**
Sol. Long coastline of 7516.6 km, India is dotted with 12 major and 181 medium and minor ports.

79. Which pie diagram represents India's age composition in 2001?
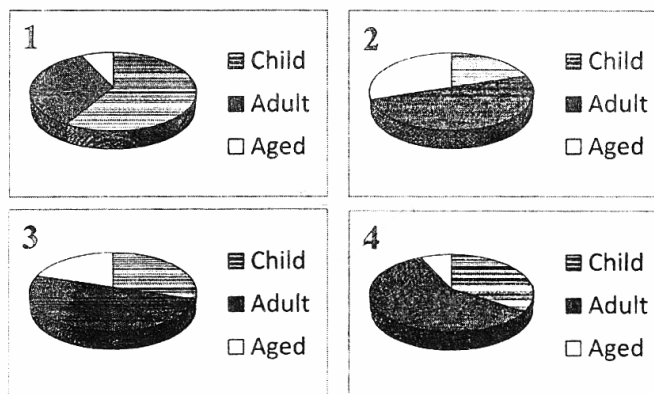
Ans. **(4)**
Sol. The age composition of a population refers to the number of people in different age groups in a country. According to 2001, The age composition of India is :
Adults – 58.7%
Aged – 6.9%
Children – 34.4%

80. **Assertion (A)** : The north western parts of India receive rainfall in winter.
Reason (R) : The winter rainfall in India occurs due to North East monsoon.
Select the correct option from the given alternatives.
(1) Both (A) and (R) are true, and (R) explain (A)
(2) Both (A) and (R), are true, but (R) does not explain (A)
(3) (A) is true and (R) is false
(4) (A) is false and (R) is true

Ans. **(2)**
Sol. During winter season, the northeast trade winds prevail over the country. They blow from land to sea and hence, for most part of the country, it is a dry season. Some amount of rainfall occurs on the Tamil Nadu coast from these winds as, here they blow from sea to land.

81. Which four major ports of India lie on the Golden Quadrilateral ?
(1) Chennai, Tuticorin, Mangalore, Marmagao
(2) Kolkata, Chennai, Mangalore, Mumbai
(3) Marmagao, Mumbai, Kandla, ,Mangalore
(4) Kolata, Mumbai, Vishakhapatanam, Chennai

Ans. **(4)**
Sol. The four major ports of India lie on the golden Quadrilateral is Kolkata, Mumbai, Vishakhapatanam and Chennai.

82. Match the fishing ports indicated on the map of India (I, H, III and IV) with their respective names.
A. Kakinada
B. Alappuzha
C. Porbandar
D. Tuticorin
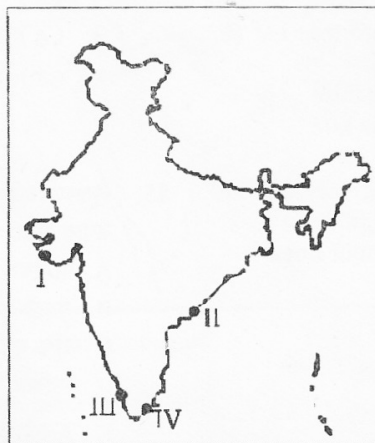
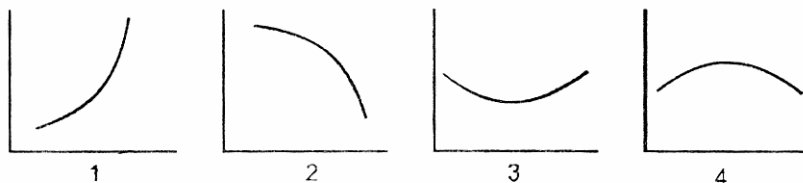(1) II-A, III-B, I-C, IV-D   (2) I-A, II-B, III-D, IV- C
(3) I-C, II-B, III-A, IV-D   (4) I-D, II-B, III-A, IV-C
Ans. **(3)**
Sol. Tuticorin in Tamil Nadu port has a natural harbour and rich hinterland.

83. Which figure relates the trend of population Growth rate 195 1-2001?

Ans. **(4)**
Sol. India's population has been steadily increasing from 361 million in 1951 to 1028 million in 2001. In 1951 the annual growth rate was 1.25% ,in 1981 it was 2.22% and in 20001 it was 1.93% Hence option 4 is correct.

84. **Assertion (A):** The Himalayan ranges show change in vegetation from tropical to tundra.
Reason (R) : In mountainous area with increase in altitude there is corresponding decrease in temperature, which leads to change in vegetation types.
Select the correct option from the given alternatives.
(1) Both (A) and (R) are true and (R) explain (A).
(2) Both (A) and (R) are true but (R) does not explain (A).
(3) (A) is true and (R) is false.
(4) (A) is false and (R) is true.
Ans. **(1)**
Sol. In mountainous area, the decrease in temperature with increasing altitude leads to the corresponding change in natural vegetation.

85. Which of the following methods are used to restrict soil erosion?
A. Ploughing along contour lines
B. Strip cropping
C. Jhumming
D. Mixed farming
(1) A and B   (2) A and C
(3) B and D   (4) B and C
Ans. **(1)**
Sol. Ploughing along the contour lines can decelerate the flow of water down the slopes, is called contour ploughing large fields can be divided into strips. Strips of grass are left to grow between the crops. This method called strip cropping.

86. **Assertion (A) :** Although only the southern part of India lies in tropical region, the whole of India has tropical climate.
**Reason (R) :** Himalaya mountain ranges protect it from the northerly cold winds. Select the correct option from the given alternatives.
(1) Both (A) and (R) are true and (R) explain (A)
(2) Both (A) and (R) are true but (R) does not explain (A)
(3) (A) is true and (R) is false.
(4) (A) is false and (R) is hue.
Ans. **(1)**
Sol. The Tropic of cancer passes through the middle of the country. Almost half of the country lying south of the Tropic of cancer, belongs to the Tropical area. The Himalayas prevent the cold winds from Central Asia from entering the subcontinent. It is because of these mountains that this subcontinent experiences comparatively milder winters as compared to central Asia. Hence Indian Climate is tropical in nature.

87. What does the zig-zag line indicate on the map of India?
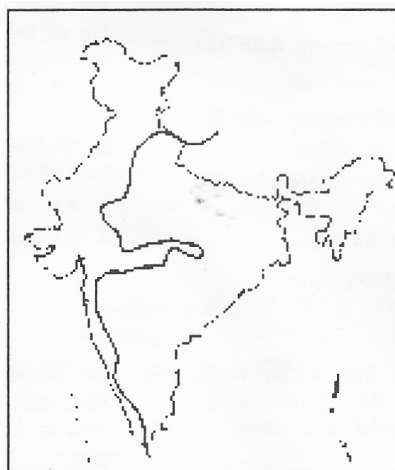
(1) Advancement summer monsoon on 1st June.
(2) Line dividing tropical evergreen and deciduous forest.
(3) Water divide between east and west flowing rivers.
(4) Line dividing annual rainfall above and below 100 cm.
Ans. **(3)**
Sol. This line shows the water divide between east and west flowing rivers.

88. Which of the following feature has similar geological structure with Meghalaya, Karbi Anglong plateau and Cachar Hills?
(1) Aravalli Range   (2) Purvanchal Hills
(3) Siwaliks   (4) Chotanagpur Plateau
Ans. **(4)**
Sol. Chotanagpur Plateau marks the further eastward extension drained by the Domodar river.

89. **Assertion (A):** Sex Ratio in India is low.
Reason (R) : Indian society has been unfavourable to females.
Select the correct option from the given alternatives.
(1) Both (A) and (R) are true, and (R) explain (A)
(2) Both (A) and (R) are true, but (R) does not explain (A)
(3) (A) is true and (R) is false
(4) (A) is false and (R) is true
Ans. **(1)**
Sol. Sex ratio is defined as the number of females per 1000 males in the population. According to 2001, the sex ratio is 933.

90. A pilot takes off from an airport at 15°S latitude and flies 55° due North. What latitude the pilot ha reached?
(1) 55°N   (2) 40°N   (3) 70° N   (4) 15°N
Ans. **(3)**
Sol. The pilot has reached at 70°N.

91. Which of the following is not a feature of Indian federalism ?
(1) The Constitution creates a strong Centre.
(2) The Constitution provides for a single judiciary
(3) The Constitution provides for a common All India Services.
(4) The Constitution provides equal representation to the States in the Upper House of Parliament.

Ans. **(4)**

Sol. Federalism is a system of government in which the power is divided between central authority and various constituent units of the country.

92. Which of these features is not a guiding value of the Indian Constitution ?
(1) No external power can dictate to the Government of India
(2) The head of the State is a hereditary position
(3) All people are equal before law.
(4) Citizens have complete freedom to follows any religion

Ans. **(2)**

Sol. According to Indian Constitution, All people are equal before the law and free to chose any religion.

93. According to Dr. B.R. Ambedkar, which of the following is 'heart and soul' of our Constitution ?
(1) The Preamble
(2) Right to Equality
(3) Right against Exploitation
(4) Right to Constitutional Remedies

Ans. **(4)**

Sol. According to B.R. Ambedkar, Right to Constitutional Remedies is the "Heart and Soul" of our Constitution.

94. Democracy is considered to be better than other forms of government. Which of the following statements support this claim ?
A. It is a more accountable form of government.
B. It improves the quality of decision making
C. It ensures rapid economic development of citizens
D. It enhances the dignity of citizens
(1) A, B and D   (2) A and C
(3) A, B and C   (4) B, C and D

Ans. **(1)**

Sol. Democracy is better form of government because, it is more accountable form of government and it enhances the dignity of citizens.

95. The Constitution. of India was amended in 1992 to make the third-tier of democracy more effective. As a result, at least one-third of all positions in the local bodies are reserved for women. This is because
(1) women are good at managing resources.
(2) although women constitute nearly half of the population, they have inadequate representation in decision-making bodies.
(3) we have many powerful women leaders.
(4) women are obedient and would follow the constitutional provisions well.

Ans. **(2)**

Sol. In 73rd Amendment Act, at least one third of seats in Local Self Government are reserved for women because women constitute nearly half of the population.

96. In which of the following economies are people more of a resource?
(1) Country A with 78% of the working age population illiterate and with very low life expectancy
(2) Country B with 10% of the working age population illiterate and with high life expectancy
(3) Country C with 60% of people in the working age illiterate, but with high life expectancy
(4) Country D with only 10% of population is the working age illiterate, but has very low life expectancy.

Ans. **(2)**

Sol. Low illiteracy level show the category of developed country.

97. Which of the following statements is true of agriculture in Indian economy between 1973 and 2003?
    (1) The sectorial share of agriculture in employment has decreased far more than its share on total output.
    (2) The sectorial share of agriculture in total output has decreased, but its share in employment has increased.
    (3) The sectorial share of agriculture in total output has increased, but its share in employment has decreased.
    (4) The sectorial share of agriculture in output has decreased far more than its share in total employment.

Ans. **(4)**
Sol. In Indian economy between 1973 and 2003, the sectorial share of agriculture in output has decreased for more than its share in total employment .

98. Which of the following can be considered as Foreign Direct Ins investment made in India?
    A. The TATAs acquire Corus steel plant abroad. r
    B. Mr. Donald, an American citizen, acquires 100 shares of an Indian listed company.
    C. The remittances sent by an Indian doctor in Dubai back to his hometown in Kerala.
    D. The US multinational Google opens its full-fledged unit at Gurgaon, Haryana.
    (1) (A) and (D)   (2) (A) and (B)
    (3) (D) Only   (4) (B) and (C)

Ans. **(3)**
Sol. The U.S multinational Google opens it full fledged unit at Gurgaon, Haryana is the example of foreign direct investment.

99. We accept paper money as a medium of exchange because
    (1) It has gold backing
    (2) the law legalizes it
    (3) Reserve Bank of India has precious metals against which it prints notes
    (4) Everyone else accepts it

Ans. **(2)**
Sol. We accept paper money as a medium of exchange because the currency is authorized by the government of the country.

100. Which of the following refers to trade barrier in the context of WTO ?
    I. Restrictions on domestic trade
    II. Not allowing companies to do foreign trade beyond specific quantity
    III. Restrictions on the export and import of goods
    IV. Restrictions on the price fixed by companies
    (1) (I), (II) and (III)   (2) (I), (II) and (IV)
    (3) (III) and (IV)   (4) (I), (II) and (IV)

Ans. **(2)**
Sol. World Trade Organisation (WTO) is an organisation whose aim is to liberalise international trade. It is not involved in domestic trade.

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