

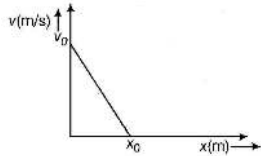
AIIMS Question Paper 2016

Duration : 3 : 30 Hrs

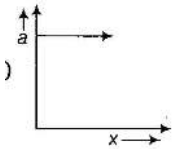
Exam AIIMS		Total Questions 200			
Marks for Correct Answer 1	Negative Marks 0.33	Physics 60	Chemistry 60	Biology 60	General Knowledge 20

Physics

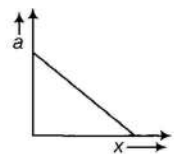
1. What will be the a vs x graph for the following graph?



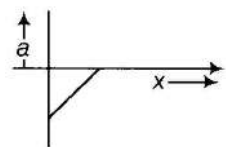
(a)



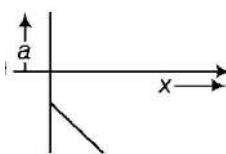
(b)



(c)



(d)



Correct: c

2. Two vectors A and B have equal magnitudes. If magnitude of $A+B$ is equal to n times the magnitude of $A-B$, then the angle between A and B is

- (a) $\cos^{-1}\left(\frac{n-1}{n+1}\right)$
- (b) $\cos^{-1}\left(\frac{n^2-1}{n^2+1}\right)$
- (c) $\sin^{-1}\left(\frac{n-1}{n+1}\right)$
- (d) $\sin^{-1}\left(\frac{n^2-1}{n^2+1}\right)$

Correct: b

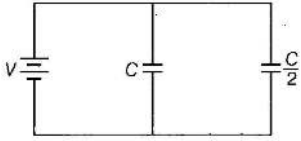
3. What changes occur, if the monochromatic light used in Young's double slit experiment is replaced by white light?

- (a) Only the central fringe is white and all other fringes are observed coloured

- (b) No fringes are observed
- (c) All the bright fringes become white
- (d) All the bright fringes are coloured between violet and red

Correct: a

4. Two capacitors C and $C/2$ are connected to a battery of V volts, as shown below

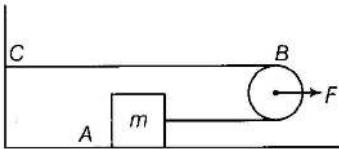


The work done in charging both the capacitors fully is

- (a) $2CV^2$
- (b) $\frac{3}{4}CV^2$
- (c) $\frac{1}{2}CV^2$
- (d) $\frac{1}{4}CV^2$

Correct: b

5. The acceleration of light pulley is



- (a) F/m
- (b) $F/2m$
- (c) $F/4m$
- (d) $F/8m$

Correct: c

6. The driver of a car travelling with speed 30ms^{-1} towards a hill sounds a horn of frequency 600 Hz . If the velocity of sound in air is 330ms^{-1} , the frequency of reflected sound as heard by driver is

- (a) 550 Hz
- (b) 555.5 Hz
- (c) 720 Hz
- (d) 500 Hz

Correct: c

7. A boat is sent across a river with a velocity of 8kmh^{-1} . If the resultant velocity of the boat is 10kmh^{-1} , the river is flowing with a velocity of

- (a) 12.8kmh^{-1}
- (b) 6kmh^{-1}
- (c) 8kmh^{-1}
- (d) 10kmh^{-1}

Correct: b

8. Two balls are thrown horizontally from the top of a tower with velocities v_1 and v_2 in opposite directions at the same time. After how much time, the angle between velocities of balls becomes 90° ?

- (a) $\frac{2\sqrt{v_1 v_2}}{g}$
- (b) $\frac{\sqrt{v_1 v_2}}{g}$
- (c) $\frac{g}{\sqrt{v_1 v_2}}$
- (d) $\frac{\sqrt{v_1 v_2}}{2g}$

Correct: b

9. A spaceship is launched into a circular orbit close to earth's surface. What additional velocity has now to be imparted to the spaceship in the orbit to overcome the gravitational pull?

(Radius of earth = 6400 km , $g = 9.8\text{m/s}^2$)

- (a) 3.28 km/s

- (b) 12 km/s
- (c) 10 km/s
- (d) 40 km/s

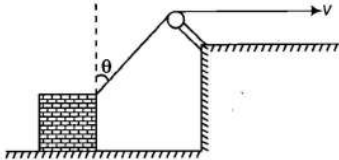
Correct: a

10. With what minimum acceleration can a fireman slide down a rope while breaking strength of the rope is $\frac{2}{3}$ of the weight?

- (a) $\frac{2}{3}g$
- (b) g
- (c) $\frac{1}{3}g$
- (d) zero

Correct: c

11. A block is dragged on a smooth plane with the help of a rope which moves with a velocity v as shown in the figure. The horizontal velocity of the block is



- (a) $\frac{v}{\sin \theta}$
- (b) $v \sin \theta$
- (c) $\frac{v}{\cos \theta}$
- (d) $v \cos \theta$

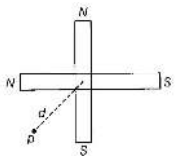
Correct: a

12. In a Young's double slit experiment, (slit distance d) monochromatic light of wavelength λ is used and the figure pattern observed at a distance L from the slits. The angular position of the bright fringes is

- (a) $\sin^{-1} \left(\frac{N\lambda}{d} \right)$
- (b) $\sin^{-1} \left(\frac{(N+\frac{1}{2})\lambda}{d} \right)$
- (c) $\sin^{-1} \left(\frac{N\lambda}{L} \right)$
- (d) $\sin^{-1} \left(\frac{(N+\frac{1}{2})\lambda}{L} \right)$

Correct: a

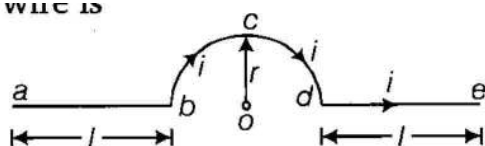
13. Two short magnets of equal dipole moments M are fastened perpendicularly at their centres as given in the figure. The magnitude of the magnetic field at a distance d from the centre on the bisector of the right angle is



- (a) $\frac{\mu_0}{4\pi} \frac{m}{d^3}$
- (b) $\frac{\mu_0}{4\pi} \frac{\sqrt{2}M}{d^3}$
- (c) $\frac{\mu_0}{4\pi} \frac{2\sqrt{2}M}{d^3}$
- (d) $\frac{\mu_0}{4\pi} \frac{2M}{d^3}$

Correct: b

14. A long wire having a semicircular loop of radius r carries a current i as shown in figure. The magnetic induction at the centre o due to entire wire is



- (a) $\frac{\mu_0 i}{4r}$

- (b) $\frac{\mu_0 i^2}{4r}$
 (c) $\frac{\mu_0 i}{4r^2}$
 (d) None of these

Correct: a

15. A particle of mass m strikes another particle of same mass at rest. Find the angle between the velocities of particle after the collision, if the collision is elastic.

- (a) $\frac{\pi}{2}$
 (b) $\frac{\pi}{3}$
 (c) $\frac{\pi}{8}$
 (d) Zero

Correct: a

16. A composite slab is prepared by pasting two plates of thicknesses L_1 and L_2 and thermal conductivities K_1 and K_2 . The slabs have equal Cross-sectional area. Find the equivalent conductivity of the slab.

- (a) $K_{eq} = \frac{L_1 + L_2}{\frac{L_1}{K_1} + \frac{L_2}{K_2}}$
 (b) $K_{eq} = \frac{L_1 + L_2}{K_1 K_2}$
 (c) $K_{eq} = \frac{4}{K_1 + K_2} + \frac{L_2}{K_1 + K_2}$
 (d) $K_{0q} = \frac{L_1 L_2}{L_1 + L_2}$

Correct: a

17. A body is orbiting very close to the earth surface with kinetic energy KE. The energy required to completely escape from it is

- (a) $\sqrt{2}KE$
 (b) $2KE$
 (c) $KE\sqrt{2}$
 (d) None of the above

Correct: d

18. A smooth wedge A is fitted in a chamber hanging from a fixed ceiling near the earth's surface. A block B placed at the top of the wedge takes time T to slide down the length of the wedge and the cable supporting the chamber is broken at the same instant, the block will be

- (a) take a time longer than to slide down the wedge
 (b) take a time shorter than T to slide down the wedge
 (c) remain at the top of the wedge
 (d) jump off the wedge

Correct: c

19. A body of mass 4 kg moving with velocity 12 m/s collides with another body of mass 6kg at rest. If two bodies stick together after collision, then the loss of kinetic energy of system is

- (a) zero
 (b) 288 J
 (c) 172.8 J
 (d) 144 J

Correct: c

20. Two simple harmonic motions are represented by the equations

$$y_1 = 0.1 \sin\left(100\pi t + \frac{\pi}{3}\right) \text{ and } y_2 = 0.1 \cos \pi t.$$

The phase difference of the velocity of particle 1 with respect to the velocity of particle 2 is at $t = 0$

- (a) $\frac{-\pi}{3}$
 (b) $\frac{\pi}{6}$
 (c) $\frac{-\pi}{6}$
 (d) $\frac{\pi}{3}$

Correct: c

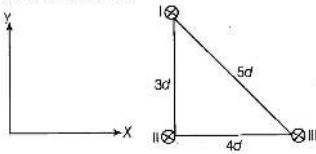
21. A body of mass 5×10^{-3} kg is launched upon a rough inclined plane making an angle of 30° with the horizontal. Obtain the coefficient of friction between the body and the plane if the time of ascent is half of the time of descent.

- (a) 0.546
 (b) 0.921

- (c) 1.926
 (d) 2.912

Correct: a

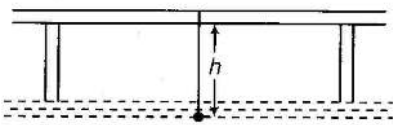
22. Three long wires, each carrying current i are placed parallel to each other. The distance between I and II is $3d$, between II and III is $4d$ and between III and I is $5d$. Magnetic field at side of wire II is



- (a) $\frac{5\mu_0 i}{24\pi d}$
 (b) $\frac{10\mu_0 i}{24\pi d}$
 (c) $\frac{15\mu_0 i}{24\pi d}$
 (d) $\frac{20\mu_0 i}{24\pi d}$

Correct: a

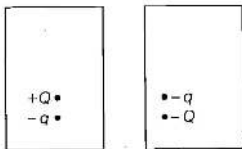
23. In an experiment to measure the height of a bridge by dropping stone into water underneath. If the error in measurement of time is 0.2s at the end of 4s, then the error in estimation of height of bridge will be (neglect the water resistance, i.e. thrust)



- (a) $\pm 19.68\text{m}$
 (b) $\pm 17.22\text{m}$
 (c) $\pm 7.84\text{m}$
 (d) $\pm 12.22\text{m}$

Correct: c

24. In the following diagrams, a particle with small charge $-q$ free to move up or down, but not sideways near a larger fixed charge Q . The small charge is in equilibrium because in the positions shown, the electrical upward force is equal to the weight of the particle. Which statement is true?



- (a) In Fig. (a), $-q$ is in stable equilibrium
 (b) In Fig. (a), $-q$ is in neutral equilibrium
 (c) In Fig. (b), $-q$ is in stable equilibrium
 (d) Neither in fig (a) nor in fig (b) $-q$ is in stable equilibrium

Correct: c

25. A lens of refractive index μ is put in a liquid of refractive index μ' . If the focal length of lens in air is f , then its focal length in liquid will be

- (a) $\frac{-f\mu'(\mu-1)}{(\mu'-\mu)}$
 (b) $\frac{-f(\mu'-\mu)}{\mu'(\mu-1)}$
 (c) $\frac{\mu'(\mu-1)}{f(\mu'-\mu)}$
 (d) $\frac{f\mu\mu'}{(\mu-\mu')}$

Correct: a

26. If an object is thrown at an angle of 60° with horizontal, find elevation angle of the object at its highest point as seen from the point of projection

- (a) $\tan^{-1} \frac{\sqrt{3}}{2}$
 (b) $\tan^{-1} \frac{1}{2}$
 (c) $\tan^{-1} \frac{1}{\sqrt{2}}$

(d) None of these

Correct: a

27. A transistor is connected in common emitter (CE) configuration. The collector supply is 8V and the voltage drop across a resistor of $800\ \Omega$ in the collector circuit is 0.8 V. If the current gain factor (α) is 0.96, then the change in base current is

- (a) $\frac{1}{24}\text{mA}$
- (b) $\frac{1}{12}\text{mA}$
- (c) $\frac{1}{6}\text{mA}$
- (d) $\frac{1}{3}\text{mA}$

Correct: a

28. A straight conductor of uniform cross-section carries a current I. Let S be the specific charge of an electron. The momentum of all the free in electron per unit length of the conductor due to their drift velocity only, is

- (a) -S
- (b) $\frac{l}{s}$
- (c) $\sqrt{\frac{I}{s}}$
- (d) $\left(\frac{I}{s}\right)^2$

Correct: b

29. A ray of light travelling in water is incident on its surface open to air. The angle of incidence is 0 , which is less than the critical angle. Then there will be,

- (a) only a reflected ray and no refracted ray
- (b) only a refracted ray and no reflected ray
- (c) a reflected ray and a refracted ray and the angle between them would be less than $180^\circ - 2\theta$
- (d) a reflected ray and a refracted ray and the angle between them would be greater than $180^\circ - 2\theta$.

Correct: c

30. A person of weight 70 kg wants to lose 7 kg by going up and down 12m high stairs. Assume he burns twice as much fat while going up than going down. If 1 kg of fat is burnt on expending 9000 k-cal. How many times must he go up and down to reduce his 7 kg weight? (Take $g = 10\text{ms}^{-2}$)

- (a) 18×10^3
- (b) 24×10^3
- (c) 30×10^3
- (d) 21×10^3

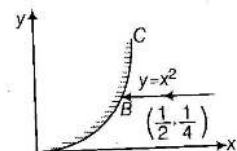
Correct: d

31. What is the refraction index of the material of a plano-convex lens, if the radius of curvature of the convex surface is 10 cm and focal length of the lens is 30 cm?

- (a) $\frac{1}{3}$
- (b) 1
- (c) $\frac{4}{3}$
- (d) $\frac{2}{3}$

Correct: c

32. In the given figure, the angle of reflection is



- (a) 30°
- (b) 60°
- (c) 45°
- (d) None of these

Correct: c

33. The n rows each containing m cells in series are joined in parallel. Maximum current is taken from this combination across an external resistance of $3\ \Omega$. If the total number of cells used is 24 and internal resistance of each cell is 0.52, then

- (a) $m = 8, n = 3$
- (b) $m = 6, n = 4$
- (c) $m = 12, n = 2$
- (d) $m = 2, n = 12$

Correct: c

34. A thin prism P_1 of angle 4° and refractive index 1.54 is combined with another prism P_2 of refractive index 1.72 produce dispersion without deviation, the angle of P_2 is

- (a) 4°
- (b) 5.33°
- (c) 2.6°
- (d) 3°

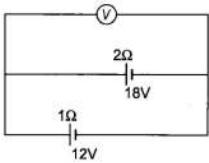
Correct: d

35. A simple telescope, consisting of an objective of focal length 60 cm and a single eye lens of focal length 5 cm is focused on a distant object in such a way that parallel rays emerge from the eye lens. If the object makes an angle of 2° at the objective, then the angular width of the image is

- (a) 10°
- (b) 24°
- (c) 50°
- (d) 48°

Correct: b

36. Two batteries, one of emf 18V and internal resistance 2 and the other of emf 12V and internal resistance 1 are connected as shown. The voltmeter V will record a reading of



- (a) 14 V
- (b) 15 V
- (c) 18 V
- (d) 30 V

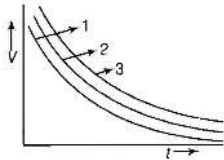
Correct: a

37. An ammeter and a voltmeter are joined in series to a cell. Their readings are A and V respectively. A resistance is now joined in parallel with the voltmeter. Then,

- (a) Both A and V will increase
- (b) Both A and V will decrease
- (c) A will decrease, V will increase
- (d) A will increase, V will decrease

Correct: d

38. Three identical capacitors A, B and C are charged to the same potential and then made to discharge through three resistance $R_A > R_B > R_C$. Their potential differences (V) are plotted against time t, giving the curves 1, 2 and 3. Choose the incorrect option.



- (a) $1 \rightarrow A$
- (b) $2 \rightarrow B$
- (c) $1 \rightarrow C$
- (d) $3 \rightarrow A$

Correct: a

39. Diffraction pattern of a single slit consists of a central bright band which is

- (a) wide, and is flanked by alternate dark and bright bands of decreasing intensity
- (b) narrow, and is flanked by alternate dark and bright bands of equal intensity
- (c) wide, and is flanked by alternate dark and bright bands of equal intensity

(d) narrow and is flanked by alternate-dark and bright bands of decreasing intensity

Correct: a

40. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion: A spring of force constant k is cut into two pieces having lengths in the ratio 1 : 2. The force constant of series combination of the two parts is $\frac{3k}{2}$

Reason: The spring connected in series are represented by $k = k_1 + k_2$

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

Correct: d

41. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) Linear momentum of a body changes even when it is moving uniformly in a circle.

Reason (R) In uniform circular motion velocity remains constant.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: a

42. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) Conductors having equal positive charge and volume, must also have same potential.

Reason (R) Potential depends only on charge and volume of conductor.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: d

43. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) Soldiers are asked to break steps while crossing the bridge.

Reason (R) The frequency of marching may be equal to the natural frequency of bridge and may lead to resonance which can break the bridge.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: a

44. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion: It is hotter over the top of a fire than at the same distance on the sides.

Reason: In the upward direction, the heat propagate through convection.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

Correct: a

45. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) A ladder is more apt to slip, when you are high up on it, then when you just begin to climb.

Reason (R) At the high up on a ladder, the torque is large and on climbing up the torque is small.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: a

46. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion: When $\theta = 45^\circ$ or 135° , the value of R remains the same, only the sign changes.

Reason: $R = \frac{v^2 \sin 2\theta}{g}$

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

Correct: a

47. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) An inductance and a resistance are connected in series with an AC circuit. In this circuit, the current and the potential difference across the resistance lags behind potential difference across the inductance by an angle

$\frac{\pi}{2}$

Reason (R) In L-R circuit, voltage leads the current by phase angle which depends on the value of inductance and resistance both.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: b

48. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion: The electric field due to a dipole on its axis line at a distance r is E. Then, electric field due to the same dipole on the equatorial line and at the same distance will be E/2.

Reason: Electric field due to dipole varies inversely as the square of the distance.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

Correct: c

49. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) When capacitive reactance is smaller than the inductive reactance in L-C-R circuit, emf leads the current.

Reason (R) The phase angle is the angle between the alternating emf and alternating current of the circuit.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: b

50. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) A brass tumbler feels much colder than a wooden tray on a chilly day.

Reason (R) The thermal conductivity of brass is less than that of wood.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: c

51. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion: A potentiometer is preferred over that of a voltmeter for measurement of emf of a cell.

Reason: Potentiometer does not draw any current from the cell.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

Correct: a

52. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) Electrons in the atom are held due to coulomb forces.

Reason (R) The atom is stable only because the centripetal force due to Coulomb's law is balanced by the centrifugal force.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: c

53. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) If a point charge q is placed in front of a infinite ground conducting plane surface, the point charge will experience a force.

Reason (R) This force is due to the induced charge on the conducting surface which is at zero potential.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: a

54. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) If a proton and an α -particle enter a uniform magnetic field perpendicularly with the same speed, then the time period of revolution of the α -particle is double than that of proton.

Reason (R) In a magnetic field, the time period of revolution of a charged particle is directly proportional to mass.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: b

55. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) Critical angle of light passing from glass to air is minimum for violet colour.

Reason (R) The wavelength of violet light is greater than the light of colours.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: c

56. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion: The mirror used in search lights are parabolic and not concave spherical.

Reason: In concave spherical mirror, the image formed is always virtual.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

Correct: c

57. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) The coil is bound over the metallic frame in moving coil galvanometer.

Reason (R) The metallic frame helps in making steady deflection without any oscillations.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: a

58. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion: Angle of deviation depends on the angle of prism.

Reason: for thin prism $\delta = (\mu - 1)A$, Where δ = angle of deviation μ = refractive index, A = angle of prism

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

Correct: a

59. In the following question, a Statement of assertion is given followed by a corresponding Statement of reason.

Assertion (A) When two coils are wound on each other, the mutual induction between the coils is maximum.

Reason (R) Mutual induction does not depend on the orientation of the coils.

Mark the correct answer.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion
- (c) Assertion is true but reason is false
- (d) Both assertion and reason are false

Correct: c

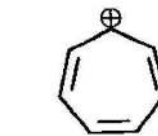
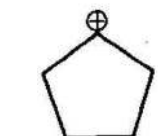
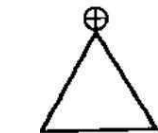
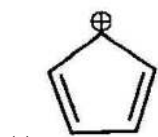
60. A box is placed on an inclined plane and has to be pushed down. The angle of inclination is

- (a) equal to the angle of friction
- (b) more than the angle of friction
- (c) equal to the angle of repose
- (d) less than the angle of repose

Correct: c

Chemistry

61. The most stable carbocation is



(d)

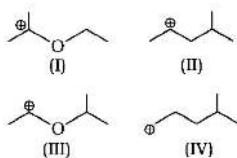
Correct: d

62. In a thermodynamics process helium gas obeys the law $T/p^{2/5} = \text{constant}$. The heat given to n moles of He in order to raise the temperature from T to 2T is

- (a) 8 RT
- (b) 4 RT
- (c) 16 RT
- (d) Zero

Correct: d

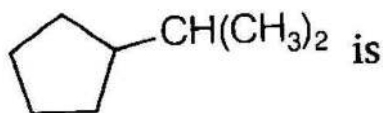
63. The correct stability order for the following species is



- (a) II > IV > I > II
 (b) I > II > III > IV
 (c) II > I IV > III
 (d) I > III > II IV

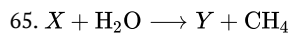
Correct: d

64. The IUPAC nomenclature of



- (a) 2-cyclopentyl propane
 (b) 1, 1-dimethyl-1-cyclopentylmethanol
 (c) 1-(1-methyl) ethylcyclopentane
 (d) None of the above

Correct: c

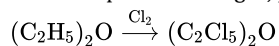


In the above reaction a unknown component X on hydrolysis gives Y and methane gas identify X and Y.

- (a) $CaC_2, Al(OH)_3$
 (b) $Al_4C_3, Al(OH)_3$
 (c) $MgC_2, Mg(OH)_3$
 (d) None of the above

Correct: b

66. In the presence of light, perchloro diethyl ether is obtained from diethyl ether.



The mechanism through which this reaction proceed.

- (a) Addition mechanism
 (b) Substitution mechanism
 (c) Free radical mechanism
 (d) Elimination mechanism

Correct: c

67. An alcohol gave Lucas test in about 5 minutes. When the alcohol was treated with hot concentrated H_2SO_4 it gave an alkene of molecular formula C_4H_8 which on ozonolysis gave C_2H_4O . The structure of alcohol is

- (a) $CH_3CHOHCH_2CH_3$
 (b) $CH_3CH_2CH_2CH_2OH$
 (c) $CH_3CHOHCH_2CH_3$
 (d) $(CH_3)_3C - OH$

Correct: c

68. The true statement for the acids of phosphorus, H_3PO_2 , H_3PO_3 and H_3PO_4 is

- (a) the order of their acidity is $H_3PO_2 > H_3PO_3 > H_3PO_4$
 (b) all of them are reducing in nature
 (c) all of them are tribasic acids
 (d) the geometry of phosphorus is tetrahedral in all the three.

Correct: d

69. H^+ ion always get associated with other atoms or molecules. This is because

- (a) ionisation enthalpy of hydrogen resembles that of alkali metals.
 (b) its reactivity is similar to halogens.

- (c) it resembles both alkali metals and halogens.
 (d) loss of an electron from hydrogen atom results in a nucleus of very small size as compared to other atoms or ions.

Correct: d

70. A quantity of hydrogen gas occupies a volume of 30.0 mL at a certain temperature and pressure. What volume would half this mass of hydrogen occupy at triple the absolute temperature if the pressure were one ninth that of the original gas?

- (a) 270 mL
 (b) 90 mL
 (c) 405 mL
 (d) 137 mL

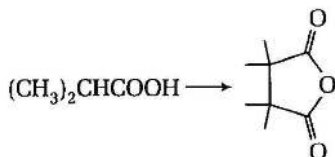
Correct: c

71. Choose the incorrect statement among the following

- (a) The chemistry of different lanthanoids is very similar.
 (b) 4f and 5f-orbitals are equally shielded
 (c) d-block element show irregular and erratic chemical properties among themselves
 (d) La and Lu have partially filled d-orbitals and no other partially filled orbitals.

Correct: b

72. The correct set of reagents for the following conversion is



- (a) $\text{P}_2\text{O}_5/\Delta, \text{P}_4/\text{L}_2, \text{Na}$
 (b) $\text{P}_4/\text{b}, \text{Na}, \text{P}_2\text{O}_5/\Delta$
 (c) $\text{P}_2\text{O}_5, \text{NaBH}_4$
 (d) $\text{P}_4/\text{b}, \text{Na}, \text{conc} \cdot \text{H}_2\text{SO}_4$

Correct: b

73. Correct order of increasing C–O bond length of CO , CO_3^{2-} , CO_2 is

- (a) $\text{CO}_3^{2-} < \text{CO}_2 < \text{CO}$
 (b) $\text{CO}_2 < \text{CO}_3^{2-} < \text{CO}$
 (c) $\text{CO} < \text{CO}_3^{2-} < \text{CO}_2$
 (d) $\text{CO} < \text{CO}_2 < \text{CO}_3^{2-}$

Correct: d

74. The zone refining process of metals is based on the principle of

- (a) excess noble character of the liquid metal than that of impurity
 (b) lower melting point of the impurity than that of pure metal
 (c) greater solubility of impure metal than that of, impurity
 (d) greater solubility of the impurities in the molten state than in the solid

Correct: d

75. Mixture X = 0.02 mole of $[\text{Co}(\text{NH}_3)_5\text{SO}_4] \text{Br}$ and 0.02 mole of $[\text{Co}(\text{NH}_3)_5\text{Br}] \text{SO}_4$ was prepared in 2L of solution

1L of mixture X + excess $\text{AgNO}_3 \rightarrow \text{Y}$

1L of mixture X + excess $\text{BaCl}_2 \rightarrow \text{Z}$

Number of moles of Y and Z are

- (a) 0.03, 0.02
 (b) 0.01, 0.02
 (c) 0.02, 0.01
 (d) 0.02, 0.02

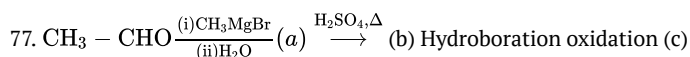
Correct: c

76. One mole of a compound react with one mole of a compound CD according to the equation $\text{AB}(g) + \text{CD}(g) \rightleftharpoons \text{AD}(g) + \text{CB}(\hat{g})$ when equilibrium had been established it was found that $3/4$ mole each of reactants AB and CD had been converted to AD and CB. There is no change in volume. The equilibrium constant for the reaction is

- (a) $6/15$
 (b) $1/9$

- (c) 19/5
(d) 9

Correct: d



In the above reaction (a) and (c) are

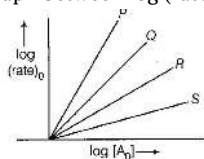
- (a) identical
(b) positional isomers
(c) functional isomers
(d) optical isomers

Correct: b

78. For n^{th} order reaction

$$\left(\frac{dx}{dt}\right) = \text{Rate} = k[A]_0^n$$

Graph between $\log(\text{rate})$ against $\log[A_0]$ is of this type



Lines P, Q, R, S are for the order

P Q R S

- (a) 0 1 2 3
(b) 3 2 1 0
(c) 1 2 3 0
(d) 0 3 2 1

Correct: b

79. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ is blue in colour while CuSO_4 is colourless, because

- (a) H_2O is a strong field ligand than SO_4^{2-}
(b) SO_4^{2-} is a strong field ligand
(c) CuSO_4 cannot form the complex
(d) No d-d transition is possible in CuSO_4

Correct: d

80. In the reaction, $A \rightarrow \text{product}$, $\frac{-dA}{dt} = K_1 A$. If we start with 10 M of A, then after one natural life time, concentration of A decreased to

- (a) 5 m
(b) 2.5 m
(c) $\frac{10m}{e}$
(d) $\frac{10m}{e^2}$

Correct: c

81. A mixture of which pair of species react with water to produce a pure colourless gas that gives white fumes with HCl?

- (a) Calcium hydride and calcium carbide
(b) Calcium carbide and aluminium nitride
(c) Magnesium nitride and calcium nitride
(d) Calcium phosphide and calcium cyanamide

Correct: c

82. Photoelectrons are liberated by ultraviolet light of wavelength 3000 Å from a metallic surface for which the photoelectric threshold is 4000 Å. The de-Broglie wavelength of electrons emitted with maximum kinetic energy is

- (a) 1.2 nm
(b) 3.215 nm
(c) 7.28 Å
(d) 1.65 Å

Correct: a

83. The electrons identified by quantum numbers n and l

1. $n=4, l=1$
2. $n=4, l=0$
3. $n=3, l=2$
4. $n=3, l=1$

can be placed in the order of increasing energy as

- (a) $3 > 4 < 2 < 1$
- (b) $4 < 2 < 3 < 1$
- (c) $2 < 4 < 1 < 3$
- (d) $1 < 3 < 2 < 4$

Correct: b

84. At a moderate pressure, the van der Waals' equation is written as

$$\left[p + \frac{a}{V^2} \right] V = RT$$

The compressibility factor is equal to

- (a) $\left(1 - \frac{a}{RTV} \right)$
- (b) $\left(1 - \frac{RTV}{a} \right)$
- (c) $\left(1 + \frac{a}{RTV} \right)$
- (d) $\left(1 + \frac{RTV}{a} \right)$

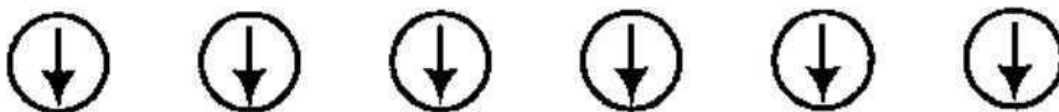
Correct: a

85. Which of the following arrangement correctly shows the magnetic moment of anti-ferromagnetic substance?

(a)



(b)



(c)

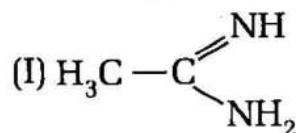


(d)



Correct: d

86. Give the correct basicity order of the following compound



- (I)
 - (II) $\text{CH}_3\text{CH}_2\text{NH}_2$
 - (III) $(\text{CH}_3)_2\text{NH}$
 - (IV) CH_3CONH_2
- (a) $\text{I} > \text{III} > \text{II} > \text{IV}$
 - (b) $\text{III} > \text{I} > \text{II} > \text{I}$
 - (c) $\text{II} > \text{I} > \text{III} > \text{IV}$
 - (d) $\text{I} > \text{II} > \text{II} > \text{IV}$

Correct: a

87. In formation of NO^+ from NO , the electron is removed from

- (a) a σ -orbital
- (b) a π -orbital
- (c) a σ^* -orbital
- (d) a π^* -orbital

Correct: d

88. Which of the following reagent is used to distinguish phenol and benzoic acid?

- (a) Aqueous NaOH
- (b) Tollen's reagent
- (c) Molisch reagent
- (d) Neutral FeCl_3

Correct: d

89. Amongst the following the lowest degree of paramagnetism per mole of the compound at 298 K will be shown by

- (a) $\text{FeSO}_4 \cdot 6\text{H}_2\text{O}$
- (b) $\text{NiSO}_4 \cdot 6\text{H}_2\text{O}$
- (c) $\text{MnSO}_4 \cdot 4\text{H}_2\text{O}$
- (d) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

Correct: d

90. CO_2 gas along with solid (Y) is obtained when

sodium salt (X) is heated. (X) is again in obtained when CO_2 gas is passed into aqueous solution (Y). (X) and (Y) respectively, are

- (a) $\text{Na}_2\text{CO}_3, \text{Na}_2\text{O}$
- (b) $\text{Na}_2\text{CO}_3, \text{NaOH}$
- (c) $\text{NaHCO}_3, \text{Na}_2\text{CO}_3$
- (d) $\text{Na}_2\text{CO}_3, \text{NaHCO}_3$

Correct: d

91. Which has the highest boiling point?

- (a) 0.1M Na_2SO_4
- (b) 0.1M $\text{C}_6\text{H}_{12}\text{O}_6$ (glucose)
- (c) 0.1M MgCl_2
- (d) 0.1M $\text{Al}(\text{NO}_3)_3$

Correct: d

92. Rate constant (K) varies with temperature as given by equation

$$\log K (\text{min}^{-1}) = 5 - \frac{2000}{T}$$

Consider the following about this equation

I. Pre exponential factor is 10^5 .

II. E_a is 9.212 kcal.

III. Variation of $\log K$ with $1/T$ is linear.

Select the correct statement.

- (a) I, II and III
- (b) Both I and II
- (c) Both II and III
- (d) Both I and III

Correct: a

93. Ionising radiation is

- (a) radiation that only interacts with ions
- (b) the same as a proton
- (c) a neutron that has acquired a charge, thus forming an ion
- (d) high energy radiation that removes electrons from atoms or molecules

Correct: d

94. The freezing point of a solution containing 0.2 g of acetic acid in 20.0 g benzene is lowered by 0.45°C . The degree of association of acetic acid in benzene is (Assume acetic acid dimerises in benzene and K_f for benzene = $5.12 \text{ K kg mol}^{-1}$)

M_{observed} of acetic acid = 113.78

- (a) 94.5 %
- (b) 54.9 %
- (c) 78.2 %
- (d) 100 %

Correct: a

95. Which of the following sets contain only addition polymers?

- (a) Polyethylene, polypropylene, terylene
- (b) Polyethylene, PVC, teflon
- (c) Buna-S, nylon, polybutadiene
- (d) Bakelite, PVC, polyethylene

Correct: b

96. 150 mL of 0.5N nitric acid solution at 25.35°C was mixed with 150 mL of 0.5 N sodium hydroxide solution at the same temperature was recorded to be 28.77°C. Heat of neutralisation of nitric acid with sodium hydroxide

- (a) -12.64 kcal
- (b) -11.98 kcal
- (c) -13.68 kcal
- (d) -12.68 kcal

Correct: c

97. Which of the following conversions involve change in both hybridisation and shape?

- (a) $\text{CH}_4 \longrightarrow \text{C}_2\text{H}_6$
- (b) $\text{NH}_3 \longrightarrow \text{NH}_4^+$
- (c) $\text{BF}_3 \longrightarrow \text{BF}_4^-$
- (d) $\text{H}_2\text{O} \longrightarrow \text{H}_3\text{O}^+$

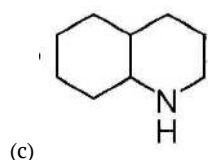
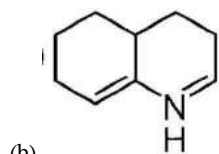
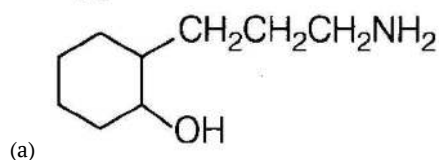
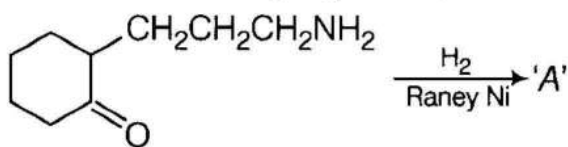
Correct: c

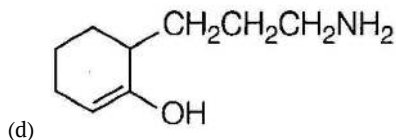
98. The equivalent conductance of an aqueous solution of 1.0283×10^{-3} g equivalent acetic acid per litre is $48.15\pi^{-1}\text{cm}^2 \text{equiv}^{-1}$ at 25°C. At infinite dilution value is $390.7\pi^{-1}\text{cm}^2 \text{equiv}^{-1}$. Calculate the degree of ionisation and ionisation constant of acetic acid.

- (a) 0.1232, 1.78×10^{-5}
- (b) 0.223, 102×10^{-5}
- (c) 0.229, 1.78×10^{-5}
- (d) 0.531, 285×10^{-5}

Correct: a

99. Consider the following equation,

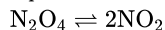




Correct: c

100. Density of equilibrium mixture of N_2O_4 and NO_2 at 1 atm and 384 K is 1.84 g/dm^3 .

Equilibrium constant of the following reaction is



- (a) 1.98 atm
- (b) 2.09 atm
- (c) 2.36 atm
- (d) 1.48 atm

Correct: b

101. What is freezing point of solution containing 8.1 g of HBr in 100 g of water, assuming the acid to be 90% ionised.

(K_f for water = 1.86 kg mol^{-1} and molar mass of HBr = 81)

- (a) -0.35°C
- (b) -1.35°C
- (c) -2.35°C
- (d) -3.53°C

Correct: d

102. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) Manganese has a less favourable electron affinity than its neighbours in either side.

Reason (R) The magnitude of an elements electron affinity depends on the elements valence shell electronic configuration.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: b

103. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) London smog is produced when carbon soot particles combine with gaseous oxides of sulphur.

Reason (R) Presence of carbon particles and SO_2 makes it reducing in nature.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

104. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) When CO_2 is continuously bubbled through lime water a precipitate is formed which later dissolves.

Reason (R) Calcium carbonate is initially, formed which reacts further with carbon dioxide to form calcium carbonate.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

105. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) Mg continues to burn in nitric oxide.

Reason (R) During the burning, the heat evolved does not decompose NO.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false

(d) Both Assertion and Reason are false

Correct: c

106. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) pH value of HCl solution is less than that of acetic acid of the same concentration.

Reason (R) In equimolar solution, the number of titrable protons present in HCl is less than that present in acetic acid.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: c

107. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) Aniline on reaction with NaNO_2/HCl at 0°C followed by coupling with

β -naphthol gives a dark blue coloured precipitate.

Reason (R) The colour of the compound formed in the reaction of aniline with NaNO_2/HCl at 0°C followed by coupling with

β -naphthol is due to the extended conjugation.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

108. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) Sulphanilic acid migrates to anode in basic medium and to cathode in acid medium.

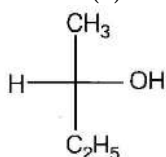
Reason (R) Sulphanilic acid is a dipolar ion and exists as cation in acidic medium and as an anion in basic medium.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

109. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) The following molecule is non-superimposable on its mirror image, hence it is chiral.



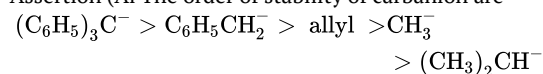
Reason (R) All chiral molecules have chiral centers.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: c

110. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) The order of stability of carbanion are



Reason (R) The stability of carbanions is influenced by both resonance and inductive effects.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

111. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) Cs and F, undergo a violent reaction to form ionic compound CsF.

Reason (R) Cs is the most electropositive and F is the most electronegative.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

112. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) Separation of Zr and Hf is difficult.

Reason (R) Zr and Hf lie in the same group of the periodic table.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: b

113. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) The enthalpy of both graphite and diamond is taken to be zero, being elementary substances.

Reason (R) The enthalpy of formation of an elementary substance in any state is taken as zero.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: d

114. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) Critical temperature of CO₂ is 304 K, it cannot be liquefied above 304 K.

Reason (R) At a certain temperature,

$$\text{volume} \propto \frac{1}{\text{pressure}}$$

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: b

115. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) The central atom of NH₃ and

H₂O, are both sp³-hybridised yet H-N-N bond angle is greater than that of H-O-H.

Reason (R) In NH₃, N-atom has one lone pair of electron whereas in H₂O, oxygen atom has two lone pairs of electrons.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

116. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) The freezing point of 0.05 M urea solution is different from that of 0.05 M sodium chloride solution.

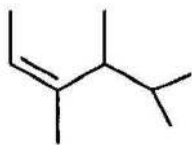
Reason (R) The depression in freezing point is directly proportional to the number of species present in the solution.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

117. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) The configuration of is z.



Reason (R) z-configuration shows the presence of bulkier groups at the opposite side of double bond.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: c

118. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ is coloured while $[\text{Sc}(\text{H}_2\text{O})_6]^{3+}$ is colourless.

Reason (R) d-d transition is not possible in $[\text{Sc}(\text{H}_2\text{O})_6]^{3+}$ because no d-electron is present, while possible for Ti^{3+} having d^1 system.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

119. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) In an atom, the velocity of electron in the higher orbits keeps on decreasing.

Reason (R) Velocity of electrons is inversely proportional to the radius of the orbit.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

120. In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct answer out of the following choice.

Assertion (A) After splitting of d-orbitals during complex formation, the orbitals form two sets of orbitals t_{2g} and e_g , octahedral field.

Reason (R) Splitting of d-orbitals occurs only in the case of strong field ligands such as CN^- .

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: c

Biology

121. Among which of the animals urinary bladder is absent?

- (a) Frog
- (b) Crow
- (c) Snake
- (d) Camel

Correct: b

122. Read the following statements regarding archaebacteria.

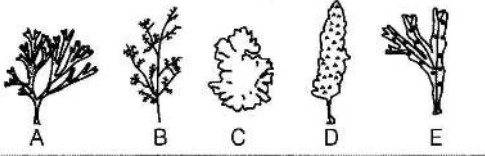
I. Their cell wall lacks peptidoglycan.

- II. They contain membrane bound organelles.
 - III. These have distinct ribosomal RNA sequence.
 - IV. Lipid in cell membrane of archaeobacteria have different structure than those in all other organisms.
- Choose the incorrect option.

- (a) I and II
- (b) Only II
- (c) Only IV
- (d) III and IV

Correct: b

123. In the given diagrams, some of the algae have been labelled as A, B, C, and E. Choose the correct option to identify these algae.



- (a) A - Dictyota, B - Polysiphonia, C - Porphyra, D - Fucus, E - Laminaria
- (b) A - Porphyra, B - Dictyota, C - Laminaria, D - Fucus, E - Polysiphonia
- (c) A - Dictyota, B - Polysiphonia, C - Porphyra, D - Laminaria, E - Fucus
- (d) A - Fucus, B - Porphyra, C - Dictyota, D - Polysiphonia, E - Laminaria

Correct: c

124. In mammals, the teeth are
- I. only two sets, present throughout life.
 - II. embedded in the socket of the jaw bones.
 - III. different types.

These conditions are respectively referred as

- (a) diphyodont, heterodont and thecodont
- (b) diphyodont, thecodont and heterodont
- (c) thecodont, diphyodont and heterodont
- (d) thecodont, heterodont and diphyodont

Correct: b

125. Identify the incorrect option for effects of the red and far red light.

- (a) Red Light - Stimulates germination, Far Red Light - Inhibits germination
- (b) Red Light -Inhibits flowering in short day plants, Far Red Light - Stimulates flowering in short day plants
- (c) Red Light -causes epicotyl hook to unbend , Far Red Light - maintains epicotyl hook bend
- (d) Red Light -Inhibits the formation of anthocyanins, Far Red Light - stimulates the formation of anthocyanins

Correct: d

126. A bacterium divides every 35 minutes. If a culture containing 105 cells/mL is grown for 175 minutes, what will be the cell concentration/mL after 175 minutes?

- (a) 5×10^5 cells
- (b) 35×10^5 cells
- (c) 32×10^5 cells
- (d) 4.175×10^5 cells

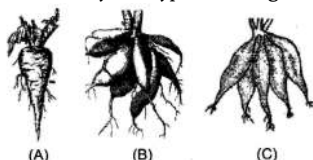
Correct: c

127. Artificial taxonomy is connected with the

- (a) use of habit and habitat of organisms
- (b) based on the presence or absence of chemicals in cells or tissues
- (c) based on morphological traits
- (d) based on evolutionary history of a species

Correct: a

128. Identify the type of root given in the figure, from the given options.



- (a) A-Fusifform, radish; B-Napiform, turmeric;
C-Tuberous, sweet potato
(b) A -Conical, turnip; B-Nodulated, sweet potato;
C-Tuberous, Curcuma amada
(c) A -Conical, carrot; B-Tuberous, sweet potato;
C-Fasciculated, Dahlia
(d) A--Napiform, carrot; B_Nodulated, Tamarind;
C-Tuberous, turmeric

Correct: c

129. Which of the following factor is incorrect for the low levels of immune response during Plasmodium infection?
(a) Different types of antigens are expressed at varying stages of Plasmodium life cycle
(b) The stages during its life cycle are mostly intracellular
(c) The sporozoites of plasmodium are rapidly cleared from blood circulation
(d) Plasmodium infection primarily destroys the macrophages and dendritic cells present in blood

Correct: d

130. In the process of apical dominance, lateral buds are unable to grow in the presence of apical bud. This is due to
(a) less amount of cytokinins in lateral buds
(b) more amount of cytokinins in lateral buds
(c) less amount of auxin in lateral buds
(d) more amount of auxin in lateral buds

Correct: d

131. Match the following Columns

Column I	Column II
A. Psychotropic drug	1. Cocaine
B. Sedative	2. LSD
C. Opiates	3. Barbiturates
D. Stimulants	4. Morphine
E. Hallucinogens	5. Pimozide

- A B C D E
(a) 5 3 4 1 2
(b) 5 2 1 4 3
(c) 2 5 4 1 2
(d) 5 3 4 2 1

Correct: a

132. Identify the correct matched pair
(a) Exchange of segments of chromatids-Zygotene
(b) Terminalisation of chiasmata-Diakinesis
(c) Appearance of chiasmata-Leptotene
(d) Synapsis of homologous chromosomes-Diplotene

Correct: b

133. The cranial nerves which originate from the medulla oblongata are
(a) IX, X, XI and XII
(b) III, VII and IX
(c) VII, VIII, IX and X
(d) VIII, IX, X, XI and XII

Correct: d

134. The value of osmotic potential of an electrolyte is always
(a) more than non-electrolyte
(b) less than non-electrolyte
(c) same as non-electrolyte
(d) All of the above

Correct: a

135. The cavity of diencephalon is known as
(a) first ventricle
(b) second ventricle

- (c) third ventricle
- (d) fourth ventricle

Correct: c

136. The modified equation for water potential is

- (a) $\Psi_w = \Psi_s + \Psi_p$
- (b) $\Psi_w = \Psi_s - \Psi_p$
- (c) $\Psi_w = \Psi_s$
- (d) $\Psi_w = \Psi_p - \Psi_s$

Correct: a

137. Fertilisation is internal in Spirogyra. Where would you get zygospores, if 3 filaments are conjugating by scalariform conjugation?

- (a) Lateral filaments
- (b) Central filaments
- (c) Central filament and both lateral filaments
- (d) Either central or lateral filament

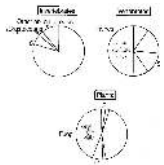
Correct: d

138. Which one is an incorrect match?

- (a) Myopia - Biconvex Lens
- (b) Olfactory - Smell
- (c) Nociceptor - Pain
- (d) Organ of Corti cells - Sensory and supporting

Correct: a

139. Refer to the following figure representing global biodiversity. Identify A-E and choose the correct option.



- (a) A - Birds, B - Reptiles, C - Algae, D - Molluscs, E - Mosses,
- (b) A - Mammals, B - Birds, C - Lichens, D - Molluscs, E - Mosses,
- (c) A - Birds, B - Amphibia, C - Mosses, D - Insects, E - Algae,
- (d) A - Birds, B - Reptiles, C - Algae, D - Insects, E - Mosses,

Correct: a

140. Which one is an incorrect match?

- (a) Glaucoma - Abnormal high pressure on liquid of eye
- (b) Eustachian tube - Connects middle ear cavity with pharynx
- (c) Caloreceptor - Heat
- (d) Interoceptor - Touch

Correct: d

141. The ploidy of bread wheat is

- (a) 4n
- (b) 6n
- (c) 2n
- (d) 8n

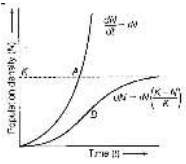
Correct: b

142. The desert grasses, often curl their leaf to minimise water loss due to presence of

- (a) spines
- (b) palisade parenchyma
- (c) bundle sheath cells
- (d) bulliform cells

Correct: d

143. The graph shows two types of population growth curve. A is exponential and B is logistic.



Which one of the following growth model considered as more realistic one?

- (a) Exponential growth curve
- (b) Logistic growth curve
- (c) Both the growth curves
- (d) None of the above

Correct: b

144. Which part of ovary in mammals acts as an endocrine gland after ovulation?

- (a) Graafian follicle
- (b) Vitelline membrane
- (c) Germinal epithelium
- (d) Chorion

Correct: a

145. During pregnancy, which of the following is secreted through the urine of mother?

- (a) Progesterone
- (b) Luteinising hormone
- (c) FSH
- (d) Human chorionic gonadotropic hormone

Correct: d

146. In callus culture, shoots can be induced by the supply of

- (a) auxin and no cytokinin
- (b) higher concentration of auxin and lower concentration of cytokinin
- (c) Higher concentration of cytokinin and lower concentration of auxin
- (d) Both auxin and cytokinin in equal amounts

Correct: c

147. The 'amino acid derivative' among the following hormone is

- (a) insulin
- (b) testosterone
- (c) oestradiol
- (d) epinephrine

Correct: d

148. Radioactive thymidene is fed to cells about to enter S-phase. It will make radioactive

- (a) euchromatin
- (b) heterochromatin
- (c) Both (a) and (b)
- (d) neither euchromatin nor heterochromatin

Correct: c

149. Adenosine deaminase (ADA deficiency) could be permanently cure, if the gene isolated from marrow cells producing ADA is introduced into cell at

- (a) early embryonic stages
- (b) Late embryonic stages
- (c) early childhood
- (d) None of the above

Correct: a

150. Which of the following is incorrect about the light reactions of photosynthesis?

- (a) P_{680} and P_{700} are the reaction centres of PS-I and PS-II respectively
- (b) Light energy provides energy for the photolysis of water through excitation of the reaction centre of PS-II
- (c) NADPH is not produced in cyclic electrons transport in light reactions
- (d) Reactions of the two photosystems are needed for the reduction of NADP

Correct: a

151. Mitochondria and chloroplast are believed to be bacterial endosymbiont because

- I. they have self nucleic acid i.e., circular ds, DNA and RNAs
- II. 70s ribosomes
- III. their membrane resembles that of bacteria, having por proteins.
- IV. ETS and ATP forming machinery is present.

- (a) I and II
- (b) I, II and III
- (c) All of these
- (d) I and IV

Correct: c

152. After examining the blood groups of husband and wife, the doctor advised them not to have more than one child. The blood groups of the couple are likely to be

- (a) male Rh⁻ and female Rh⁺
- (b) male Rh⁻ and female Rh⁺
- (c) female Rh⁻ and male Rh⁺
- (d) male Rh⁻ and female Rh⁺

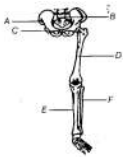
Correct: c

153. The premature termination of polypeptide synthesis due to stop codon can be overcome via compensatory mutation in tRNA. This genetic phenomenon is called

- (a) extragenic suppression
- (b) intragenic suppression
- (c) codon bias
- (d) true reversion

Correct: a

154. Consider the diagram given below.



Parts labelled as A, B, C, D, E and F respectively indicate.

- (a) Sacrum, ilium, pubis, femur, tibia and fibula
- (b) Ilium, pubis, sacrum, femur, fibula and tibia
- (c) Sacrum, pubis, ilium, femur, tibia and fibula
- (d) Ilium, sacrum, pubis, femur, tibia and fibula

Correct: d

155. The first heart sound occurs due to

- (a) opening of semilunar valve
- (b) closing of semilunar valve
- (c) onset of auricular systole
- (d) sudden closure of AV valves

Correct: d

156. The volume of anatomically dead space, air in the lungs of human beings is normally

- (a) 230 mL
- (b) 210 mL
- (c) 190 mL
- (d) 150 mL

Correct: d

157. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion Allelopathy is a form of ammensalism that occurs in plants.

Reason Allelopathy is the symbiotic association of the roots of higher plant and fungi.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: c

158. Which of the following sets do not have homologous organs?

- (a) Mouth parts of cockroach and butterfly
- (b) Wings of butterfly and bird
- (c) Wings of mosquito and butterfly
- (d) Forelegs of horse and paddles of whale

Correct: b

159. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion In four 'o'clock plant, a cross between homozygous white flower and homozygous red flower produce pink flower.

Reason In these plants, the colour of flower is determine by three alleles.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: c

160. Haemocyanin, the blue colouring pigment of molluscan blood contains

- (a) magnesium
- (b) copper
- (c) iron
- (d) manganese

Correct: b

161. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) A genetic probe is helpful in the detection of specific DNA sequence.

Reason (R) Genetic probe is a radio-labelled C-DNA, which has complementary base sequence, to DNA fragment which is to be detected.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: a

162. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Inhibition or death of one occurs organism by another through the production of some byproduct is known as antibiosis.

Reason (R) Antibiosis is a type of negative interaction.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: b

163. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion Darwin held that small favourable variations formed raw material for evolutions.

Reason Darwin did not study the factors which produce variations.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: b

164. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Non-sense codon are responsible for termination of peptide chain.

(R) Non-sense codons are not recognised by tRNA.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion

- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: a

165. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion In syconus fruit, the achenes formed are fewer than the total number of flower in the inflorescence.

Reason Upper and middle flower cannot develop into fruits.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

166. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) CAM plants lack structural compartment atom of leaf as found in C_4 plants.

Reason (R) Stomata of CAM plants are open during day.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: c

167. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) From evolutionary point of

Reason (R) One major evolutionary trend in human has been larger head undergoing relatively faster growth rate in the foetal stage.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: d

168. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion Techniques called superovulation and embryo transplantaion are used for cattle improvement.

Reason Gonadotropin injection release more than one ova (superovulation) in high yielding cows. These are fertilised by artificial insemination with sperms from a pedigree bull. Early embryos are transplanted into surrogate mothers for development.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: a

169. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Dipnoi subclass of Pisces are rare class which has an evolutionary link between Pisces and Amphibia.

Reason (R) It helps in the maturation of embryo after fertilisation

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: a

170. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Helianthus flower is not a real flower.

Reason (R) Because they are lacking the true calyx around the flower.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: c

171. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Polymorphism is a speciality of coelenterates where alternation in generation occurs.

Reason (R) It helps in species dispersal.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: c

172. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion Gallstone are caused by disturbances in the composition of the bile.

Reason A change in the ratio of liver glycogen and bile salts may result in formation of deposits.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: c

173. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Penicillin is obtained from *Penicillium griseofulvum*.

Reason (R) Terramycin is obtained from *Staphylococcus griesus*.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: d

174. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Bidder canal is associated with the conduction of sperms of frog.

Reason (R) These canals are the part of frog's reproduction system and connect to the cloaca of frog.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: c

175. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Large intestine also shows the presence of villi, like small intestine.

Reason (R) Absorption of water, some salts and drugs are done by inner wall of large intestine.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: d

176. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion Capillary water is the readily available soil water to plants.

Reason Capillary water is the thin film of water which is retained around soil particles.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: c

177. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Pons varoli is a link between upper brain and spinal cord.

Reason (R) It helps in regulation of breathing movements.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: b

178. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Water absorption in plants is reduced by lowering O₂ tension.

Reason (R) The accumulation of CO₂ reduce water absorption in plants.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: b

179. Read the Assertion and Reason carefully to mark the correct option from those given below

Assertion Agrobacterium tumefaciens is a popular genetic engineer because this bacteria is associated with the roots of all cereal and pulse crops.

Reason A gene incorporated in the bacterial chromosomal genome gets automatically suppressed into the crop with which the bacteria is associated.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) Assertion is true but Reason is false
- (d) Both Assertion and Reason are false

Correct: d

180. In each of the following questions statement of Assertion is given followed by corresponding statement of Reason. Of the statements, mark the correct answer as

Assertion (A) Western blotting and ELISA tests are used to detect HIV infection in human.

Reason (R) These two techniques use same genomic probes (RNA), which are found in HIV.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- (d) Both assertion and Reason is false

Correct: c

General Knowledge

181. Who is the author of the book 'Glimpses of World History'?

- (a) Abdul Kalam Azad
- (b) Jawahar Lal Nehru
- (c) S Gopalan
- (d) S Radhakrishnan

Correct: b

182. Who was the man of the match of the 1983 World Cup Final?

- (a) Kapil Dev
- (b) Roger Binny
- (c) Sunil Gavaskar
- (d) M Amarnath

Correct: d

183. With which game is the Agha Cup associated?

- (a) Football
- (b) Cricket
- (c) Basketball
- (d) Hockey

Correct: d

184. The village selected by Sachin Tendulkar for development under the Sansad Adarsh Gram Yojna (SAGY) is

- (a) Meerpur
- (b) Donja
- (c) Seelampur
- (d) Badarpur

Correct: b

185. The 7th meeting of which grouping's immigration authorities was held on 2nd August, 2016 in Pakistan?

- (a) SAARC
- (b) ASEAN
- (c) OPEC
- (d) EU

Correct: a

186. Of the following, which one is the best insulator?

- (a) Wood
- (b) Cloth
- (c) Glass
- (d) Paper

Correct: c

187. The punchline "Think Different" is related to

- (a) Apple Macintosh
- (b) Arcelor
- (c) Haier
- (d) Dell

Correct: a

188. The first state to become bifurcated after independence was

- (a) Bengal
- (b) Mumbai
- (c) Punjab
- (d) Assam

Correct: b

189. Yeast is an important source of

- (a) invertase
- (b) vitamin-C
- (c) protein
- (d) vitamin-B

Correct: d

190. The first Indian woman member of International Olympic committee after being elected at the 129th IOC Session in Rio on 3rd August, 2016, is

- (a) Neelam Dhawan
- (b) Saraswati Nathan
- (c) Nita Ambani
- (d) Suman Saraswati

Correct: c

191. Shiv Kumar Sharma is a famous player of

- (a) sitar
- (b) flute
- (c) tabla
- (d) santoor

Correct: d

192. The world's longest and highest glass-bottomed bridge in the world is opened in

- (a) India

- (b) China
- (c) Japan
- (d) USA

Correct: b

193. The Chameli Devi Award is given to an outstanding woman who is

- (a) vocalist
- (b) lawyer
- (c) journalist
- (d) scientist

Correct: c

194. Who flagged-off the 'Run for Rio' from Major Dhyani Chand National Stadium India Gate to Jawaharlal Nehru Stadium in July, 2016?

- (a) President Pranab Mukherjee
- (b) Prime Minister Narendra Modi
- (c) Vice-President Hamid Ansari
- (d) LS Speaker Sumitra Mahajan

Correct: b

195. Dronacharya Award is given to

- (a) fire fighting operation
- (b) archery
- (c) significant contribution in the spread of literacy
- (d) outstanding coaching of athletics

Correct: d

196. Which one of the following tax was exempted on remittances from abroad by the Central Board of Excise and Customs?

- (a) Sales Tax
- (b) Import Duty
- (c) Export Duty
- (d) Service Tax

Correct: d

197. India's famous Peacock Throne and the diamond kohinoor were taken away by

- (a) Ahmad Shah Abdali
- (b) Mohammad Ghori
- (c) Nadir Shah
- (d) Robert Clive

Correct: c

198. Who wrote the book 'Gandhi and Stalin' ?

- (a) Rajmohan Gandhi
- (b) Nelson Mandela
- (c) Louis Fisher
- (d) Martin Luther

Correct: c

199. A tax which is paid by the person on whom the tax is incident is called

- (a) local tax
- (b) indirect tax
- (c) rate
- (d) direct tax

Correct: d

200. How many players are there in a kabaddi team?

- (a) 7
- (b) 11
- (c) 9
- (d) 5

Correct: a

