

Paper Id	Paper Name
58877547	BFUHS PMET 2016 Actual Shift 2

Question Paper Name: BFUHS PMET 2016 Actual Shift 2
Subject Name: BFUHS PMET 2016
Number of Questions: 200
Total Marks: 800
Display Marks: No

BFUHS PMET 2016

Group Marks: 800

Physics

Section Marks: 200
Display Number Panel: Yes
Group All Questions: No

Question Number : 1 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the errors in the measurement of mass and the length of a cubical body are 2% and 3% respectively, then the error in the measurement of the density of the body will be:

Options :

1. 5%
2. 6%
3. 1%
4. 11%

Question Number : 2 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An object is projected at a certain angle with the horizontal has a range 100m. If the time of flight of the object is 20 seconds, then the horizontal component of the velocity of the object is:

Options :

1. 2 m/s
2. 3.5 m/s
3. 5 m/s
4. 10 m/s

Question Number : 3 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A solid sphere and a thin spherical shell of same radii rotate about their diameters with the same angular momentum but with different angular velocities. If M_1 and M_2 be the masses of the solid sphere and spherical shell respectively and the angular velocity of the solid sphere is double than the angular velocity of the spherical shell, the (M_1/M_2) is:

Options :

1. $2/5$
2. $2/3$
3. $3/5$
4. $5/6$

Question Number : 4 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A wheel of moment of inertia about its centre of mass 4 kg m^2 is spinning with an angular velocity of 15 rad/s . If the wheel is brought to rest by a braking torque in 2.5 second, then value of the torque is:

Options :

1. 24 Nm
2. 26.5 Nm
3. 37.5 Nm
4. 60 Nm

Question Number : 5 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An athlete can jump upto the height of 2.5 metre on the surface of the earth. The height, he might be able to jump on an imaginary planet whose density is $1/4$ th the density of the earth and radius is half that of the earth is:

Options :

1. 5 m
2. 10 m
3. 15 m
4. 20 m

Question Number : 6 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

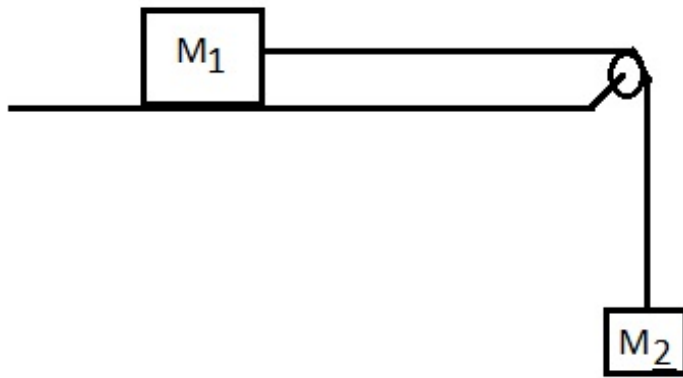
A car covers the first half of the distance between two stations at the speed of 40 km/h and the second half of the distance at $v \text{ km/h}$. If the average speed of the car during the whole journey is 48 km/h , then the value of v is:

Options :

1. 44 km/h
2. 50 km/h
3. 60 km/h
4. 64 km/h

Question Number : 7 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two objects of mass M_1 and M_2 are connected by a light string that passes over a frictionless pulley as shown in figure given below ($M_2 > M_1$)



If the coefficient of friction between the object of mass M_1 and the plane surface is μ , the acceleration of the system is:

Options :

1.
$$\frac{(M_2 + \mu M_1)g}{(M_1 + M_2)}$$

2.
$$\frac{(M_2 - \mu M_1)g}{(M_1 + M_2)}$$

3.
$$\frac{(M_1 + M_2)g}{(M_1 + \mu M_2)}$$

4.
$$\frac{\mu M_1 M_2 g}{(M_1 + M_2)}$$

Question Number : 8 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A ball tied to an inextensible string is swung in a vertical circle. The physical quantity that remains constant is:

Options :

1. speed of the ball
2. tension in the string
3. centripetal force
4. earth's pull on the ball

Question Number : 9 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

if $\vec{A} = \hat{i} + 2\hat{j} - \hat{k}$ and $\vec{B} = 2\hat{i} + 3\hat{j} + 4\hat{k}$, then the vector perpendicular to both the vector \vec{A} and \vec{B} is

Options :

1. $11\hat{i} - 6\hat{j} - \hat{k}$

2. $11\hat{i} + 6\hat{j} - \hat{k}$

3. $11\hat{i} - 6\hat{j} + \hat{k}$

4. $-11\hat{i} - 6\hat{j} + \hat{k}$

Question Number : 10 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
 If the linear momentum of a body increases by 50 %, then the increase in the kinetic energy of the body is:

- Options :**
1. 25%
 2. 0.5
 3. 100%
 4. 125%

Question Number : 11 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body of mass m_1 moving in a straight line with a speed v_1 collides head on with another stationary body of mass m_2 . If after collision both the bodies move together, then the loss in the kinetic energy due to collision is:

Options :

1. $\frac{1}{2} \frac{(m_1 m_2) v_1^2}{m_1 + 2m_2}$

2. $\frac{1}{2} \frac{m_1 \cdot v_1^2}{(m_1 + 2m_2)}$

3. $\frac{1}{2} \frac{m_1 m_2 v_1^2}{m_1 + m_2}$

4. $\frac{1}{2} \frac{(m_1 + m_2) v_1^2}{m_1 + 2m_2}$

Question Number : 12 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A solid sphere of mass M and radius R rolls without slipping at a uniform velocity v along a straight line over a smooth horizontal surface. The total kinetic energy of the sphere is:

Options :

1. $1/2 Mv^2$
2. Mv^2
3. $0.7 Mv^2$
4. $0.83 Mv^2$

Question Number : 13 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The coefficient of volume expansion of an ideal gas at constant pressure:

Options :

1. increases with increase in temperature
2. decreases with increase in temperature
3. remains the same with increase in temperature
4. None of these

Question Number : 14 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If two identical soap bubbles coalesce to form a single big bubble, then the ratio of the surface energy of the big bubble to that of the small bubble is:

Options :

1. $(2)^{-2/3}$
2. $(2)^{-1/3}$
3. $(2)^{2/3}$
4. $(2)^{1/3}$

Question Number : 15 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Eight identical drops of water are falling down through air, each with a terminal velocity v . If they combine to form a big drop, then the terminal velocity of the big drop is:

Options :

1. $v/4$
2. $4v$
3. $v/8$
4. $8v$

Question Number : 16 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pressure exerted by water on a fish at a depth h below the surface of lake water is $1.209 \times 10^5 \text{ N/m}^2$. If atmospheric pressure is $1.013 \times 10^5 \text{ N/m}^2$ and $g = 9.8 \text{ m/s}^2$, then the value of h is:

Options :

1. 20 m
2. 15 m
3. 10 m
4. 2 m

Question Number : 17 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Water in a container cools from 80°C to 70°C in 9 minutes. If the temperature of the surroundings is 20°C , then the time taken by water to cool from 70°C to 60°C is:

Options :

1. 9 minutes
2. 10 minutes
3. 11 minutes
4. 12.5 minutes

Question Number : 18 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two bodies A and B of equal masses are suspended from two separate massless springs of spring constants K_1 and K_2 respectively. If both bodies oscillate simple harmonically such that the magnitude of their maximum accelerations are equal, then the ratio of the amplitude of oscillation of body A to that of body B is:

Options :

1. $\sqrt{\frac{K_2}{K_1}}$

2. $\sqrt{\frac{K_1}{K_2}}$

3. $\frac{K_2}{K_1}$

4. $\left(\frac{K_2}{K_1}\right)^2$

Question Number : 19 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A wave travelling along a string is represented by

$$y = 0.2 \sin(20t - 2.0x)$$

Where x is in metres and t in seconds. The speed of the wave is:

Options :

1. 20 m/s

2. 10 m/s

3. 5 m/s

4. 2 m/s

Question Number : 20 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body is projected vertically upwards from the surface of the earth of radius R with a velocity equal to half of the escape velocity. The maximum height attained by the body is:

Options :

1. $R/3$

2. $R/2$

3. $R/6$

4. $R/15$

Question Number : 21 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statements is correct?

Options :

1. Woolen clothes keep our body warm because they produce heat due to convection

2. Bernoulli's theorem is a consequence of the law of conservation of mass

3. Latent heat of fusion of a substance is less than the latent heat of vaporization of the substance

4. Dimensional formula of coefficient of viscosity is $[M^{-1} L^{-1} T]$

Question Number : 22 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a given process on an ideal gas, volume of the gas remains constant and $dQ < 0$. Then for the gas

Options :

1. temperature will increase

2. temperature will decrease
3. temperature will remain the same
4. pressure will remain constant

Question Number : 23 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A police van and a car are approaching each other from opposite directions on a straight highway. The police van is travelling with a speed of 72 km/h and its siren is emitting sound at a frequency of 640 Hz. The frequency of the sound heard by the driver of the car travelling with a speed of 54 km/h is: (speed of sound = 340 m/s)

Options :

1. 577.8 Hz
2. 631.1 Hz
3. 708.9 Hz
4. 710 Hz

Question Number : 24 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A test charge of $+2 \mu\text{C}$ is placed at a point P where the electric field due to other charges has a magnitude of $3 \times 10^6 \text{ N/C}$ and directed to the right. If the test charge is replaced with a charge of $-2 \mu\text{C}$, then the electric field at point P:

Options :

1. decreases in magnitude and changes direction
2. increases in magnitude and changes direction
3. remains the same
4. has the same magnitude but changes direction

Question Number : 25 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A spherical balloon contains a positively charged particle at its centre, If the balloon is inflated to double its volume keeping the charged particle at its centre, then:

Options :

1. the electric potential at the surface of the balloon remains the same
2. the magnitude of the electric field at the surface of the balloon remains the same
3. the electric flux through the balloon increases
4. the electric flux through the balloon remains the same

Question Number : 26 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A proton is released from rest in a uniform electric field of intensity E directed along positive x-axis. If the proton undergoes a displacement d in the direction of the electric field, then the electrical potential energy of the proton:

Options :

1. increases
2. decreases
3. remains the same
4. None of these

Question Number : 27 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An electric circuit provides a current of 15 A at an operating voltage of 120V. The number of bulbs each of 60W which can be operated with this voltage source are:

Options :

1. 20
2. 25

3. 30

4. 35

Question Number : 28 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two charged particles A and B are projected with the same velocity at right angles to a magnetic field of intensity B. Both the particles A and B describe circular paths of radii r_1 and r_2 respectively. The ratio of the specific charge of the particle A to the specific charge of the particle B is:

Options :

1. (r_1/r_2)

2. (r_2/r_1)

3. $(r_1/r_2)^2$

4. $(r_2/r_2)^2$

Question Number : 29 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If an electron revolves around the nucleus of an atom in an orbit of radius 0.53 \AA at a frequency of 5×10^{15} revolution/second, then the magnetic induction at the centre of the orbit is:

Options :

1. 7.48 T

2. 8.89 T

3. 9.00 T

4. 9.48 T

Question Number : 30 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The magnetic flux through a closed coil is varying with time according to the relation:

$$\Phi = 5 + 2t^2$$

The magnitude of the induced e.m.f in the coil

Options :

1. increases with time

2. decreases with time

3. first increases and then decreases

4. is independent of time

Question Number : 31 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a resistor of 12 ohm, an inductor of inductance 0.1 H and a capacitor of reactance 19.4 ohm are joined in series and connected across a 220V, 50 Hz a.c. Supply, then the phase angle between the current and voltage is:

Options :

1. $\pi/6$

2. $\pi/4$

3. $\pi/3$

4. $\pi/2$

Question Number : 32 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a plane electro magnetic wave, the electric field of amplitude 36 V/m oscillates sinusoidally at a frequency of 2.0×10^{10} Hz in vacuum. The amplitude of the oscillating magnetic field is:

Options :

1. 10.8×10^{-7} T
2. 1.6×10^{-7} T
3. 1.06×10^{-7} T
4. 1.2×10^{-7} T

Question Number : 33 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the active state of a transistor:

Options :

1. both emitter base junction and collector base junction are forward biased
2. both emitter base junction and collector base junction are reverse biased
3. emitter base junction is forward biased and collector base junction is reverse biased
4. emitter base junction is reverse biased and collector base junction is forward biased

Question Number : 34 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A message signal given by

$$E_m = 10 \sin 2 \times 10^4 \pi t$$

is used to modulate a carrier wave given by $E_c = 20 \sin 2 \times 10^6 \pi t$

The frequencies of the modulated signal are

Options :

1. 1.98 MHz, 2 MHz, 2.02 MHz
2. 0.99 MHz, 1 MHz, 1.01 MHz
3. 0.49 MHz, 1 MHz, 1.01 MHz
4. 0.89 MHz, 1 MHz, 0.91 MHz

Question Number : 35 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During β^- -decay

Options :

1. an electron which is already present in the nuclear is ejected
2. an atomic electron is ejected
3. a part of the binding energy of the nucleus is converted into an electron
4. a neutron already present in the nucleus decays into proton giving an electron

Question Number : 36 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A convex lens of focal length ' f ' is in contact with a concave lens of focal length 25 cm. If the power of the combination of these two lenses is -1.5 D, then the focal length ' f ' of the convex lens is:

Options :

1. 15 cm
2. 20 cm
3. 40 cm
4. 42.5 cm

Question Number : 37 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The refracting angle of a prism 'A 'and refractive index of the material of the prism is cosec (A/2). The angle of minimum deviation is:

Options :

1. $(180^\circ - 2A)$
2. $(180^\circ - A)$
3. $(180^\circ + 2A)$
4. $(180^\circ + A)$

Question Number : 38 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In young's double slit experiment, using monochromatic light of wavelength λ , the intensity of light at a point on the screen where path difference is λ is I units. What is the intensity of light at a point on the screen where the path difference is $\lambda/4$

Options :

1. $\lambda / 8$
2. $\lambda / 4$
3. $\lambda / 2$
4. λ

Question Number : 39 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If de-Broglie wavelength of an electron having kinetic energy 100 eV is λ , then the de-Broglie wavelength of electron having kinetic energy 400 eV is:

Options :

1. 4λ
2. 2λ
3. λ
4. $\frac{\lambda}{2}$

Question Number : 40 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When light of frequency ν_1 is incident on a metal surface having threshold frequency ν_0 is the maximum kinetic energy of the emitted photo electron from the metal surface is K. If the light of frequency ν_2 is incident on the same metal surface, then the maximum kinetic energy of the emitted photo electron is:

Options :

1. $2k$
2. $3k$
3. $5k$
4. $8k$

Question Number : 41 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The frequency of the series limit of Lyman series of hydrogen atom in terms of Rydberg constant R and speed of light in vacuum (c) is :

Options :

1. $2Rc$
2. $2/Rc$
3. Rc
4. $Rc/2$

Question Number : 42 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The half life of a radioactive substance is 10 days. This implies that

Options :

1. the substance is completely disintegrates in 20 days
2. the substance is completely disintegrates in 50 days
3. $1/64$ part of the mass of the substance disintegrates at the end of 30 days
4. $7/8$ part of the mass of the substance disintegrates in 30 days

Question Number : 43 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The image formed by the objective of compound microscope is:

Options :

1. virtual, erect and magnified
2. virtual, inverted and magnified
3. real, inverted and magnified
4. real, erect and magnified

Question Number : 44 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An aperture of size 'd' is illuminated by a parallel beam of light of wavelength λ . The distance from the aperture at which ray optics has a good approximation is:

Options :

1. λ^2 / d
2. λ^2 / λ
3. λ^2
4. λ/d

Question Number : 45 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two cells of e.m.f. 2V, 3V and internal resistances 1ohm and 2 ohm respectively are connected in parallel. The equivalent e.m.f of the parallel combination of the cells is:

Options :

1. $1/3$ V
2. $4/3$ V
3. $7/3$ V
4. $8/3$ V

Question Number : 46 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A power transmission line feeds input power at 2200V to a step down transformer with its primary windings having turns 3000. The number of turns in the secondary windings in order to get output power at 220V are:

Options :

1. 300
2. 400
3. 600
4. 800

Question Number : 47 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A mettalic wire of lenght L has a magnetic moment M. If the wire is bent into a semi-circular arc, then the value of new magnetic moment is:

Options :

1. M / π

2. $M / 2\pi$
3. $2M / \pi$
4. $2\pi M$

Question Number : 48 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a body released from the top of a tower of height h takes t seconds to reach the ground, then the height of the body from the ground after $(t/3)$ seconds is:

Options :

1. $h / 9$
2. $3h / 8$
3. $h / 8$
4. $8h / 9$

Question Number : 49 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If Carnot's engine operating between the source temperature 227°C and sink temperature 27°C takes up 1 kJ of heat from the source in one cycle, then the work done by the engine is:

Options :

1. 800 J
2. 600 J
3. 400 J
4. 200 J

Question Number : 50 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two rods of different materials having Young's moduli Y_1 and Y_2 and coefficients of thermal expansion α_1 and α_2 are fixed between two rigid supports. The rods are heated to the same temperature. If there is no bending of the rods, the thermal stresses developed in these rods are equal provided:

Options :

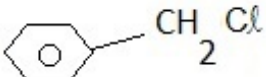
1.
$$\frac{Y_1}{Y_2} = \sqrt{\frac{\alpha_2}{\alpha_1}}$$

2.
$$\frac{Y_1}{Y_2} = \frac{\alpha_1}{\alpha_2}$$

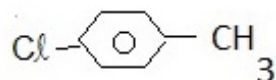
3.
$$\frac{Y_1}{Y_2} = \sqrt{\frac{\alpha_1}{\alpha_2}}$$

4.
$$\frac{Y_1}{Y_2} = \frac{\alpha_2}{\alpha_1}$$

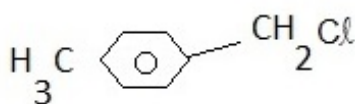
Question Number : 51 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Given compounds are 

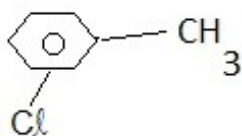
(a)



(b)



(c)



(d)

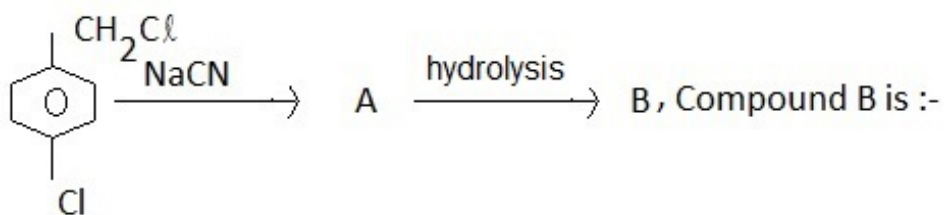
Which of the above compounds on treatment with Mg/Eiher solvent followed by treatment with H_2O will give toluene

Options :

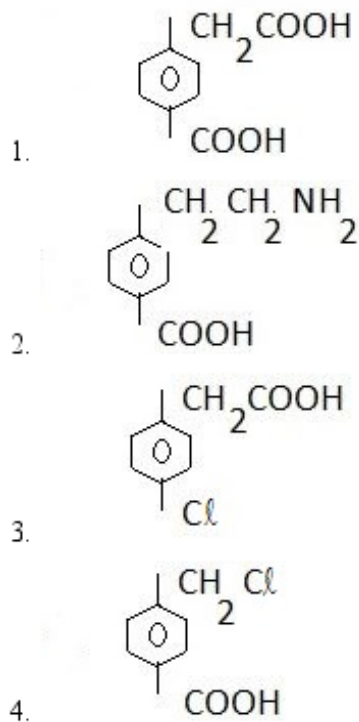
1. b, d
2. b, c, d
3. a, b, d
4. a, b, c

Question Number : 52 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

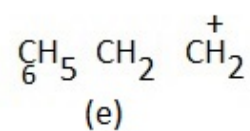
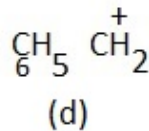
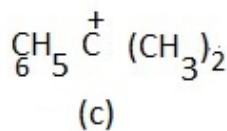
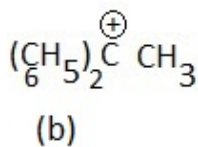
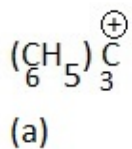
Compound B is:



Options :



Question Number : 53 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
The order of stability of above carbocations



is

Options :

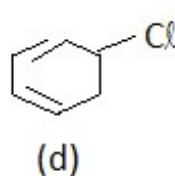
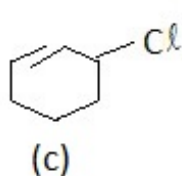
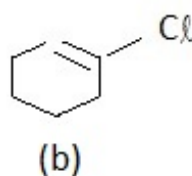
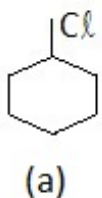
1. a>b>c>d>e
2. a>b>d>c>e
3. a>b>c>e>d
4. d>e>a>b>c

Question Number : 54 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
When p-xylene is treated with O_3 followed by treatment with $\text{Zn}/\text{H}_2\text{O}$. The product obtained are

Options :

1. Glyoxal
2. 2 Methyl glyoxal
3. Dimethyl glyoxal
4. Glyoxal + methyl glyoxal

Question Number : 55 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Order of dehydro halogenation of the following compounds



Options :

1. $d > c > a > b$
2. $d > b > c > a$
3. $c > d > a > b$
4. $a > b > c > d$

Question Number : 56 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

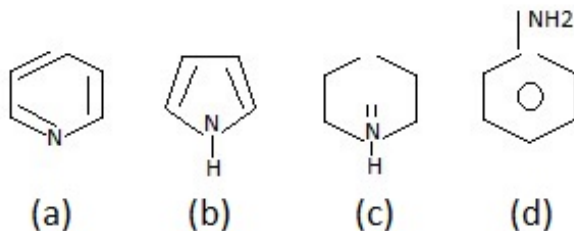
The relative reactivity of HCHO , CH_3CHO , $(\text{CH}_3)_3\text{CCHO}$, CH_3COCH_3 , $\text{C}_6\text{H}_5\text{COCH}_3$ in nucleophilic addition reaction is

Options :

1. $\text{HCHO} > \text{CH}_3\text{CHO} > (\text{CH}_3)_3\text{CCHO} > \text{CH}_3\text{COCH}_3 > \text{C}_6\text{H}_5\text{COCH}_3$
2. $\text{CH}_3\text{COCH}_3 > \text{C}_6\text{H}_5\text{COCH}_3 > \text{CH}_3\text{CHO} > (\text{CH}_3)_3\text{CCHO} > \text{HCHO}$
3. $\text{CH}_3\text{CHO} > (\text{CH}_3)_3\text{CCHO} > \text{HCHO} > \text{CH}_3\text{COCH}_3 > \text{C}_6\text{H}_5\text{COCH}_3$
4. $\text{HCHO} > \text{CH}_3\text{CHO} > \text{CH}_3\text{COCH}_3 > (\text{CH}_3)_3\text{CCHO} > \text{C}_6\text{H}_5\text{COCH}_3$

Question Number : 57 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The basic character of

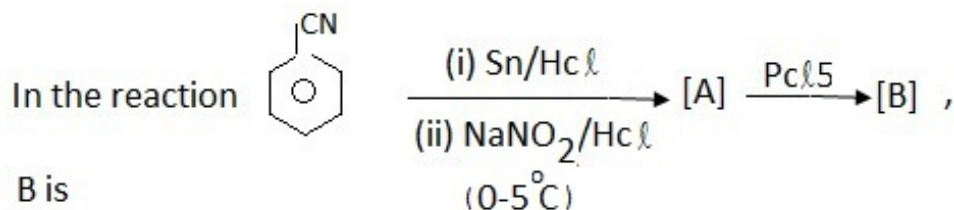


is in the order

Options :

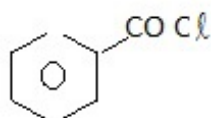
1. $c > a > d > b$
2. $a > c > d > b$
3. $c > a > b > d$
4. $b > c > a > d$

Question Number : 58 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

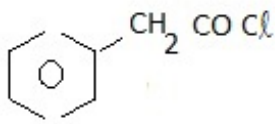


Options :

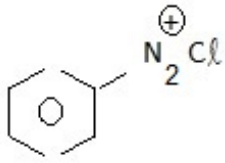
1.



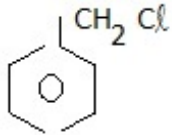
2.



3.

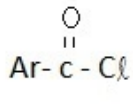


4.

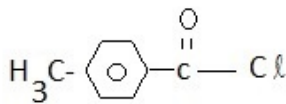


Question Number : 59 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

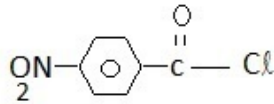
The order of reactivity in nucleophilic substitution of the following is in the order



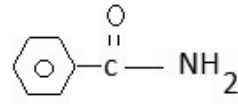
(a)



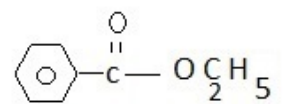
(b)



(c)



(d)



(e)

Options :

1. c>a>b>d>e

2. b>a>c>e>d

3. c>a>b>e>d

4. c>b>a>e>d

Question Number : 60 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Find the incorrect statements:

a. α (D) glucose and β (D) glucose are anomers and also enantiomers

b. Fructose is a ketose hence it does not give positive test with tollens reagent and Fehling solution

c. There are four chiral carbon in α (D) glucose

d. sucrose is a reducing sugar

Options :

1. a

2. b,c

3. c,d

4. a,b,c,d

Question Number : 61 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an atom when

(a) $n=4, l=3, m=2$

(b) $n=4, l=2, m=0$

(c) $n=4, l=2$

(d) $n=3, l=1$

The number of orbitals in a, b, c, d are respectively

Options :

1. 7, 5, 5, 3

2. 1, 1, 5, 3

3. 7, 1, 5, 3

4. 7, 1, 3, 5

Question Number : 62 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The bond order in (a) PO_4^{-3} (b) SO_4^{-2} (c) ClO_4^{-1} (d) SiO_4^{-4} are respectively

Options :

1. 1.75, 1.5, 1.25, 1.5

2. 1.25, 1.25, 1, 1.5

3. 1.25, 1.5, 1.75, 1

4. 1.5, 1.5, 1, 1

Question Number : 63 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of lone pairs on the central atom in ClO_3^- , XeF_4 , SF_4 , I_3^- are respectively

Options :

1. 1, 2, 1, 2

2. 1, 2, 1, 3

3. 2, 2, 1, 3

4. 2, 2, 2, 2

Question Number : 64 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statements are correct

(a) size of hydrated ions is in the order $\text{K}^+ > \text{Na}^+ > \text{Li}^+$

(b) Water of crystallization in BeSO_4 , MgSO_4 , CaSO_4 is in the order $\text{BeSO}_4 > \text{MgSO}_4 > \text{CaSO}_4$

(c) KO_2 is paramagnetic

(d) Solubility of BeSO_4 , MgSO_4 , CaSO_4 in H_2O is in the order $\text{BeSO}_4 > \text{MgSO}_4 > \text{CaSO}_4$

Options :

1. b, c, d

2. a, b, c

3. c, d

4. all

Question Number : 65 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

100 ml of 0.1M HCl and 100 ml of 0.1 M Na OH are mixed (both the solutions have same temprature) The rise in temp is ΔT_1 . If the same experiment is repeated with 50 ml solution of each rise in temprature is ΔT_2 , then

Options :

1. $\Delta T_2 > \Delta T_1$
2. $\Delta T_2 = \Delta T_1$
3. $\Delta T_2 = 2 \Delta T_1$
4. $\Delta T_1 = 2 \Delta T_2$

Question Number : 66 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Out of the following which are not correctly matched

- (a) $[\text{Ni}(\text{CO})_4]$, sp^3
- (b) $[\text{Ni}(\text{CN})_4]^{-2}$, sp^3
- (c) $[\text{CoF}_6]^{-3}$, $d^2 sp^3$
- (d) $[\text{Fe}(\text{CN})_6]^{-3}$, $sp^3 d^2$

Options :

1. a,b
2. a, c
3. b,c,d
4. a, c, d

Question Number : 67 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Select the pair where both ions are colourless

Options :

1. Cu^+ , Fe^{+2}
2. Zn^{+2} , Cd^{+2}
3. Mn^{+2} , Sc^{+3}
4. Ag^+ , Cr^{+3}

Question Number : 68 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Select the incorrect statement

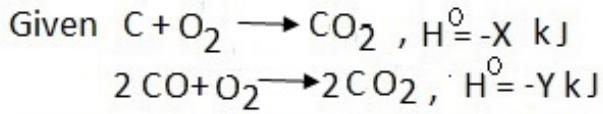
- (a) Ideal gases can be liquefied by cooling to a very low temprature and then applying high pressure
- (b) At ordinary temperature when H_2 , He are compressed and allowed to pass into vacuum under adiabatic condition rise in temp is observed
- (c) At ordinary temperature H_2 , He are less compressible than ideal gas
- (d) The surface tension of a liquid at critical temp is maximum

Options :

1. a

2. d
3. a,d
4. b,c

Question Number : 69 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical



Then the enthalpy of formation CO will be

1. $Y-2x$
2. $2X-Y/2$
3. $Y-2X/2$
4. $X-Y/2$

Options :

1. 1
2. 2
3. 3
4. 4

Question Number : 70 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

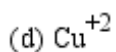
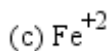
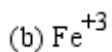
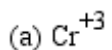
K_{sp} of $\text{CaF}_2 = 1.7 \times 10^{-10}$ (Given) The precipitation of CaF_2 will take place when equal volume of solutions containing Ca^{+2} and F^- are mixed in

Options :

1. $10^{-4} \text{ M Ca}^{+2} + 10^{-4} \text{ M F}^-$
2. $10^{-2} \text{ M Ca}^{+2} + 10^{-3} \text{ M F}^-$
3. $10^{-5} \text{ M Ca}^{+2} + 10^{-3} \text{ M F}^-$
4. $10^{-5} \text{ M Ca}^{+2} + 10^{-5} \text{ M F}^-$

Question Number : 71 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Arrange the following in order of their magnetic moment



Options :

1. $c > b > a > d$

2. $b > c > d > a$
3. $a > b > c > d$
4. $b > c > a > d$

Question Number : 72 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a, b, c stands for edge length of a simple cubic, face centred cubic and body centred cubic lattice then the ratio of radii of sphere placed in these system will be in the order:

Options :

1. $\frac{a}{2} : \frac{b}{2\sqrt{2}} : \frac{\sqrt{3}c}{4}$

2. $\frac{a}{2} \quad \frac{b}{\sqrt{2}} \quad \frac{\sqrt{3}c}{4}$

3. $\frac{a}{2} : \sqrt{2}b \quad \sqrt{3}c$

4. $\frac{a}{2} \quad \frac{b}{\sqrt{2}} \quad \frac{\sqrt{3}}{2}c$

Question Number : 73 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The relative lowering of vapour pressure of an aq. solution of a nonvolatile solute is 0.01, the molarity of solution will be

Options :

1. 0.54
2. 0.56
3. 0.58
4. 0.55

Question Number : 74 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

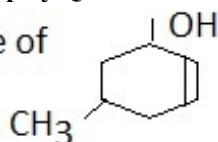
Under same reaction conditions if initial concentration = 1.386 mol L^{-1} and half life period for 1st order reaction is 40 sec and zero order = 20 sec then the ratio of their rate constant will be

Options :

1. $0.5 \text{ mol}^{-1}\text{L}$
2. $1 \text{ mol}^{-1}\text{L}$
3. $0.75 \text{ mol}^{-1} \text{ L}$
4. $2 \text{ mol}^{-1} \text{ L}$

Question Number : 75 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The IUPAC name of



Options :

1. 5- methyl cyclohex-2-enol

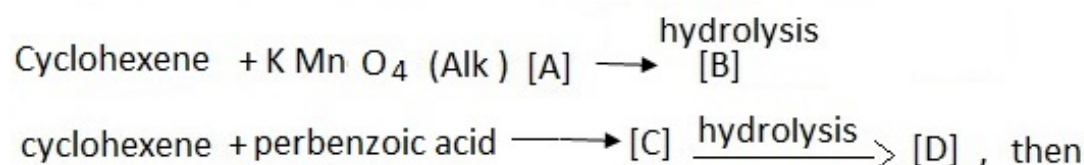
2. 3-Hydroxy-5-methyl cyclohexene
3. 4- methyl -6- hydroxy cyclohexene
4. 2-Hydroxy-4-methyl cyclohexene

Question Number : 76 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
 $K_2Cr_2O_7 + xH_2SO_4 + yH_2S \longrightarrow K_2SO_4 + Cr_2(SO_4)_3 + zH_2O + z'S$. The coefficient x, y, z, z' are respectively

Options :

1. 4, 3, 5, 3
2. 4, 5, 7, 3
3. 4, 3, 7, 3
4. 4, 3, 4, 3

Question Number : 77 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical



Options :

1. both B and D have Cis Geometry
2. Both B and D have trans geometry
3. B is Cis and D is trans
4. B is trans and D is Cis

Question Number : 78 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
 In coupling reaction the favorable conditions are:

- (a) Diazonium salt and aromatic compound should have electron donating group
- (b) Diazonium salt having electron withdrawing group and aromatic compound electron donating group
- (c) solution should be ice cold
- (d) Diazonium salt having electron donating group and aromatic compound having electron withdrawing group

Options :

1. a, c
2. b, c
3. c, d
4. none of these

Question Number : 79 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
 Pick up the wrong statements

- (a) the co-agulating power of an electrolyte for sol. of As_2S_3 is in the order $K_3PO_4 > BaCl_2 > AlCl_3$
- (b) The co-agulating power in the above case is in the order $AlCl_3 > BaCl_2 > K_3PO_4$
- (c) The co-agulating value of KCl , $BaCl_2$, $AlCl_3$ in co-agulating sol of it is As_2S_3 is in the order $KCl > BaCl_2 > AlCl_3$
- (d) Co-agulating value and co-agulating power of an electrolyte are directly proportional to each other

Options :

1. a, d

2. b, c, d
3. a, c, d
4. a, c

Question Number : 80 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

3 faraday electricity is passed through Aq sol of silver nitrate, copper sulphate , Aluminium chloride. The molar ratio of cations deposited on cathods are

Options :

1. 1 : 1 : 1
2. 1 : 2 : 3
3. 3 : 2 : 1
4. 6 : 3 : 2

Question Number : 81 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a reaction $A_2 + B_2 \longrightarrow 2AB$, the mechanism is $A_2 \rightleftharpoons 2A$ (fast)

$A + B_2 \longrightarrow AB + B$ (slowest)

$A + B \longrightarrow AB$ (fast)

The order of the above reaction is

Options :

1. 1
2. 1.5
3. 2
4. 2.5

Question Number : 82 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a reaction $A + B \rightleftharpoons C + D$ $K_{eq} = 1 \times 10^{-3}$ at 300 K

and $K_{eq} = 1.2$ at 400 K then the above reaction will be

Options :

1. Exothermic
2. Endothermic
3. can be exothermic or endothermic
4. No Relationship between K_{eq} and ΔH

Question Number : 83 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following are correct statements:

- (a) Marsh gas contains ethane and carbon dioxide
- (b) Major components of water gas are Carbon monoxide and Hydrogen
- (c) In SiO_2 each Si is bonded with four oxygen and each oxygen is bonded to two silicon atom
- (d) when PbO_2 is treated with hot concentrated HNO_3 , O_2 is produced

Options :

1. a, b, c, d
2. c, d
3. b, d
4. b, c, d

Question Number : 84 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statements are wrong:

- (a) sodium stearate causes water pollution
- (b) Aspartame can be used as artificial sweetner in cold food only
- (c) Bubble gum contains styrene butadiene rubber
- (d) Bubble gum contains acrylonitrile butadiene rubber

Options :

1. a, b
2. b, c
3. b, d
4. a,d

Question Number : 85 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Tl^+, I_3^- is an ionic compound. It gives the following ions in solution

Options :

1. Tl^{+3}, I^-
2. Tl^+, I^-
3. Tl^+, I_2, I^-
4. Tl^+, I_3^-

Question Number : 86 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statements are correct

- (a) Starch, cellulose are biodegradable polymers
- (b) starch is biodegradable while cellulose is non biodegradable
- (c) natural rubber has trans contiguration at every double bond
- (d) PVC is a fully chlorirated polymer

Options :

1. a
2. b
3. a, c
4. a, d

Question Number : 87 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Two hexoses were found to form same osazone. Which of the following statement is correct with respect to their structure

Options :

1. The carbon atoms 1,2 in both have same configuration
2. They are epimeric at C3
3. The carbon atoms 3, 4, 5 in both have same configuration
4. both are aldose

Question Number : 88 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Succinic acid on strong heating undergoes

Options :

1. decarboxylation
2. dehydration
3. decarboxylation + dehydration
4. none of these

Question Number : 89 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Number of stereo isomers obtained by the chlorination of trans-2-butene

Options :

1. 1
2. 2
3. 3
4. 4

Question Number : 90 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
When ethyl acetate is heated in presence of sodium ethoxide the compound obtained is

Options :

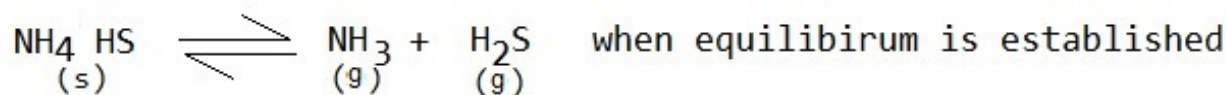
1. acetic acid
2. acetic anhydride
3. ethyl aceto acetate
4. ethyl propionate

Question Number : 91 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
The correct sequence of acidic character of the following

Options :

1. formic acid > benzoic acid > acetic acid > 2, 4, 6 trinitrophenol > ethyl alcohol
2. formic acid > acetic acid > benzoic acid > 2, 4, 6 trinitrophenol > ethyl alcohol
3. 2, 4, 6 trinitrophenol > formic acid > benzoic acid > acetic acid > ethyl alcohol
4. benzoic acid > formic acid > acetic acid > 2, 4, 6 trinitrophenol > ethyl alcohol

Question Number : 92 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

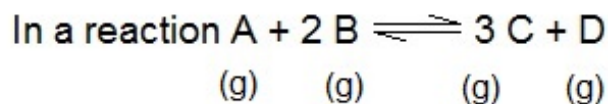


the total pressure = P then K_p will be

Options :

1. $P \text{ Atm}$
2. $P^2 \text{ atm}^2$
3. $\frac{P^2}{4} \text{ atm}^2$
4. $2 P \text{ Atm}$

Question Number : 93 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical



if we start with 4 moles of A and 7 moles of B and at Equilibrium state 2 moles of A are left and if P in the total pressure at Equilibrium state then the partial pressure of D at Equilibrium state will be

Options :

1. $P/13$
2. $2P/13$
3. $P/5$
4. $P/6$

Question Number : 94 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Acetamide is treated with $\text{Na NO}_2/\text{HCl}$ brisk reaction take place, the product formed are

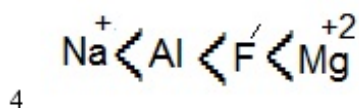
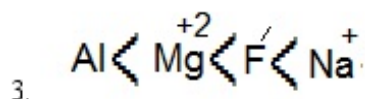
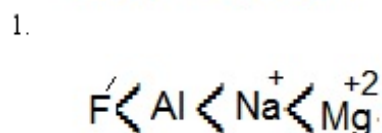
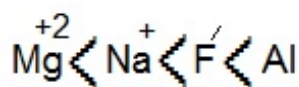
Options :

1. $\text{CO}_2 + \text{CH}_3 \text{ COOH}$
2. $\text{CO}_2, \text{CH}_3 \text{ COOH}, \text{H}_2\text{O}$
3. $\text{N}_2, \text{CH}_3\text{COOH}, \text{H}_2\text{O}$
4. $\text{NH}_3, \text{CH}_3\text{COOH}$

Question Number : 95 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The size of following species increase in the order

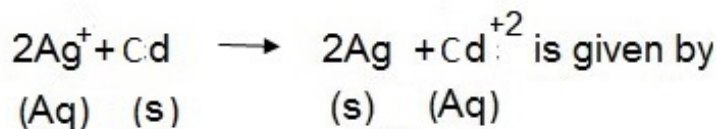
Options :



Question Number : 96 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$E^{\circ}_{\text{Cd}^{+2}/\text{Cd}} = -0.40\text{V} \quad E^{\circ}_{\text{Ag}^{+}/\text{Ag}} = 0.80\text{V}$$

the standard free energy change for the reaction



Options :

1. 115.8 KJ
2. -115.8 KJ
3. -231.6 KJ
4. 231.6 KJ

Question Number : 97 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An ester (M.F) $\text{C}_4\text{H}_8\text{O}_2$ on hydrolysis gives an acid which reduces tollen reagent and an alcohol which gives iodoform test. The ester is

Options :

1. Ethyl acetate
2. Methyl Propionate
3. n Propyl formate
4. Iso Propyl formate

Question Number : 98 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

H_2 acts as an oxidant in the reaction with

Options :

1. Cl_2
2. Ca
3. S
4. N_2

Question Number : 99 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The boiling point of NH_3 , PH_3 , AsH_3 , SbH_3 , H_2O are in the order

Options :

1. $\text{H}_2\text{O} > \text{SbH}_3 > \text{NH}_3 > \text{AsH}_3 > \text{PH}_3$
2. $\text{H}_2\text{O} > \text{NH}_3 > \text{PH}_3 > \text{AsH}_3 > \text{SbH}_3$
3. $\text{H}_2\text{O} > \text{SbH}_3 > \text{AsH}_3 > \text{NH}_3 > \text{PH}_3$
4. $\text{H}_2\text{O} > \text{SbH}_3 > \text{AsH}_3 > \text{PH}_3 > \text{NH}_3$

Question Number : 100 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which are incorrect statements

(a) Potassium ferricyanide produces on ionisation 3 ions

(b) The number of isomers in $[\text{Co}(\text{en})_2\text{Cl}_2]^+$ is three

(c) In $\text{K}_4[\text{Ni}(\text{CN})_4]$ The oxidation number of Ni is +1

(d) The co-ordination number of Fe in $[\text{Fe}(\text{EDTA})]^{-1}$ is 6

Options :

1. a, b, c
2. a, c
3. b, c, d
4. a, b, c, d

Biology

Section Marks:

400

Display Number Panel:

Yes

Group All Questions:

No

Question Number : 101 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Members of which algal class impart red colour to Red sea?

Options :

1. Cyanophyceae
2. Rhodophyceae
3. Phaeophyceae
4. Bacillariophyceae

Question Number : 102 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following association of two organisms is known as lichen?

Options :

1. Algae and fungi.
2. Algae and roots
3. Fungi and roots
4. Algae and corals

Question Number : 103 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following is used as biofertilizer:

Options :

1. *Azolla*
2. *Marchantia*
3. *Funaria*
4. *Dryopteris*

Question Number : 104 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which crop was affected during the infamous Irish famine

Options :

1. Wheat
2. Potato
3. Maize
4. Rice

Question Number : 105 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most common photobiont from green algae in lichen thallus is:

Options :

1. *Trebouxia*
2. *Tetraspora*
3. *Chlamydomonas*
4. *Volvox*

Question Number : 106 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is true about prions?

Options :

1. Useful Polysaccharide of galactose.
2. High molecular weight infectious proteins.
3. Small nucleic acid fragments capable of replication.
4. Low molecular weight infectious proteins.

Question Number : 107 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

CAM plants open their stomata during night only because they tend to:

Options :

1. Promote the rate light reaction.
2. Promote the rate dark reaction.
3. Minimize the rate of transpiration
4. Maximize the rate of transpiration.

Question Number : 108 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a Hornwort?

Options :

1. *Marchantia*
2. *Anthoceros*
3. *Funaria*
4. *Polytrichum*

Question Number : 109 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Who coined the term Genetics to the science of heredity?

Options :

1. Mendel
2. Johanson
3. Bateson

4. Punnet

Question Number : 110 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which plant possess highest protein content?

Options :

1. *Spirulina*
2. *Glycine max*
3. *Arachis hypogea*
4. *Pisum sativum*

Question Number : 111 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The concept of cellular totipotency in plants was given by:

Options :

1. Haberlandt
2. Steward
3. White
4. Skoog

Question Number : 112 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which statement is not correct about photosynthesis in *Ficus religiosa* (Peepul tree).

Options :

1. It releases Oxygen during day.
2. It releases Oxygen during night.
3. It releases Carbon dioxide during night.
4. It releases Carbon dioxide and oxygen during day.

Question Number : 113 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The principal site of atmospheric Nitrogen fixation in Blue green algae is:

Options :

1. Heterocyst
2. Green cells
3. Akinetes
4. Aplanospores

Question Number : 114 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If flower is a modified shoot then floral organs i.e. calyx ,corolla, androecium and gynoecium are:

Options :

1. Modified stem
2. Modified stem and leaves
3. Modified leaves only
4. Unknown modified organs

Question Number : 115 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A system of classification which incorporates evolutionary history is regarded as:

Options :

1. Natural
2. Artificial

3. Half natural and half artificial
4. Phylogenetic

Question Number : 116 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Who is known as father of green revolution in India?

Options :

1. Dr. M.S. Swaminathan
2. Dr. B.C. Roy
3. Dr. Birbal Sahni
4. Dr. P. Maheshwari

Question Number : 117 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which tissue organic food travels?

Options :

1. Phloem
2. Xylem
3. Both xylem and phloem
4. Epidermis

Question Number : 118 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cut apple turns brown when kept in air for some time. This is due to the presence of :

Options :

1. Ferrous ions
2. Ferric ions
3. Magnesium ions
4. An enzyme action

Question Number : 119 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which microscopy is considered best to study living microorganisms?

Options :

1. Electron microscopy
2. Bright field microscopy
3. Dark field microscopy
4. Phase contrast microscopy

Question Number : 120 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In plant cell division the cytokinesis is mediated by:

Options :

1. Cell plate
2. Cleavage
3. Furrow
4. Both cleavage and furrow

Question Number : 121 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The 2009 Nobel Prize was awarded to an Indian molecular biologist named Venkatraman Ramakrishnan for the discovery of :

Options :

1. Mitochondrial function

2. Chloroplast function
3. Ribosome structure and function
4. Nuclear structure

Question Number : 122 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which law of Mendelian genetics can be considered universal?

Options :

1. Dominance
2. Co-dominance
3. Independent assortment
4. Segregation

Question Number : 123 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What conclusion was drawn from red drop and enhancement experiments in the light reaction of photosynthesis?

Options :

1. Two photo systems are present.
2. One photo system is present.
3. Two photo systems are present which work at different wavelengths.
4. Two photo systems are present which work at same wavelength.

Question Number : 124 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the Lac Operon model of gene regulation the word Operon stands for:

Options :

1. Group
2. Single
3. Group of different genes
4. Group of similar genes

Question Number : 125 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which statement is not true about biodiversity in India?

Options :

1. India is rich in biodiversity.
2. Indo-Burma is not a biodiversity hotspot.
3. Western Ghats and Sri Lanka are rich in rain forests
4. One horned Rhinoceros is found in Eastern Himalayan hotspot.

Question Number : 126 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most diverse group of plants on earth are:

Options :

1. Bryophytes
2. Ferns
3. Gymnosperms
4. Angiosperms

Question Number : 127 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which animal pollinator is not attracted by scent (Fragrance) of a flower?

Options :

1. Bird
2. Moth
3. Bat
4. Butterfly

Question Number : 128 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pyramid of energy is always upright. This is in accordance with the law of :

Options :

1. Thermodynamics
2. Tolerance
3. Limiting factors
4. Evolution

Question Number : 129 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In ecology the word conservation means:

Options :

1. Management and protection of natural world.
2. Management and protection of plants only.
3. Management and protection of animals only.
4. Management and protection of endangered plants only.

Question Number : 130 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following is a feature of Savanna grassland?

Options :

1. Tropical or sub tropical
2. Temperate
3. Alpine
4. None of the above

Question Number : 131 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which atmospheric gas is mainly responsible for Green house effect?

Options :

1. Carbon dioxide
2. Carbon monoxide
3. Methane
4. Neon

Question Number : 132 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a result of habitat destruction, poaching, climate change and lack of resource management?

Options :

1. Decline of biodiversity.
2. Decline of selection pressure.
3. Decline of natural resources.
4. Increase of Green house effect.

Question Number : 133 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which organism is known as *Drosophila* of plant kingdom?

Options :

1. *Saccharomyces*
2. *Arabidopsis*
3. *Capsella*
4. *Danio*

Question Number : 134 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The genetically modified crops (GM) may contain the gene of interest from:

Options :

1. Closely related species
2. Distantly related species
3. Bacteria or animals
4. All is correct

Question Number : 135 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a generic name for the national flower of India?

Options :

1. *Nelumbo*
2. *Nuphar*
3. *Nymphaea*
4. *Najas*

Question Number : 136 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The corolla of F_1 offspring is always pink coloured when a cross is made between red and white coloured plants of *Mirabilis jalapa*. This situation is known as:

Options :

1. Failure of Mendelian genetics
2. Incomplete dominance
3. Co dominance
4. Cooperative behavior of genes

Question Number : 137 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The experiment of Meselson-Stahl proved that:

Options :

1. DNA replication is semi conservative.
2. DNA replication is conservative.
3. DNA replication is dependent upon enzymes
4. DNA replication is dependent upon RNA

Question Number : 138 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The networking of different food chains in a ecosystem provide:

Options :

1. Stability
2. Instability
3. Origin of new species

4. None of the above

Question Number : 139 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which statement is correct about BT-COTTON?

Options :

1. contains a gene from jellyfish which makes it to glow in dark.
2. It contains a gene from Bacillus bacteria which is not useful to plant.
3. It contains a gene from Bacillus bacteria which kill the pests.
4. It contains a gene from Bacillus bacteria which kill other plants.

Question Number : 140 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Gram staining procedure of bacteria is based upon the properties of:

Options :

1. Cell membrane
2. Cell wall
3. Capsule
4. DNA

Question Number : 141 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cell theory was proposed by:

Options :

1. Schleiden and Hook
2. Schleiden and Schneider
3. Schleiden and Schwann
4. Schleiden and Franklin

Question Number : 142 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which cytological phenomena supports Mendel laws of heredity?

Options :

1. Cell division
2. Cell transformation
3. Cell communication
4. Cell fusion

Question Number : 143 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The epidermis of a leaf possess tiny pores called stoma which perform the function of :

Options :

1. Gaseous exchange
2. Oxygen evolution
3. Carbon dioxide evolution
4. Carbon dioxide absorption

Question Number : 144 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following is not required by plants for their normal healthy growth?

Options :

1. Magnesium
2. Lead

3. Calcium
4. Iron

Question Number : 145 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most recent model proposed for the structure of cell membrane is:

Options :

1. Fluid membrane model
2. Fluid mosaic model
3. Fluid static model
4. Atomic model

Question Number : 146 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cell membrane is:

Options :

1. Permeable
2. Impermeable
3. Semi permeable
4. Differentially permeable

Question Number : 147 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

True nucleus is absent in:

Options :

1. Bacteria
2. Fungi
3. Bryophytes
4. Pteridophytes

Question Number : 148 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The secondary growth in dicot plants is mediated by:

Options :

1. Cork cambium
2. Vascular cambium
3. Wound cambium
4. Both cork and vascular cambium

Question Number : 149 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Robert Hooke published his work on cork cells in:

Options :

1. Genera plantarum
2. Species plantarum
3. Micrographia
4. Cytologia

Question Number : 150 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following equation is correct?

Options :

1. $DPD = OP - TP$

2. $DPD = OP + TP$
3. $DPD = OP \times TP$
4. $DPD = OP \div TP$

Question Number : 151 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following is likely to be absent at the time of origin of life:

Options :

1. Hydrogen
2. Oxygen
3. Nitrogen
4. Methane

Question Number : 152 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

To be evolutionary successful mutation must occur in:

Options :

1. Germplasm DNA
2. Somatoplasm DNA
3. Plasma Protein
4. RNA

Question Number : 153 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The galapagos island are associated with the visit of:

Options :

1. J. Lamarck
2. Charles Darwin
3. A. Wallace
4. De Vries

Question Number : 154 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which era mammals evolved:

Options :

1. Mesozoic
2. Coenozoic
3. Pre - Cambrian
4. Palaeozoic

Question Number : 155 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is not a gene linked disease:

Options :

1. Haemophilia
2. Daltonism
3. Myxoedema
4. Alkaptonuria

Question Number : 156 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fraternal twins in man are produced when:

Options :

1. Two sperms fertilize an ovum and the first two blastomeres separate from each other
2. One sperm fertilizes an ovum and first two blastomeres separate from each other
3. Eggs develop penthenogenetically and first two blasomeres separate from each other
4. Two ova are fertilized simultaneously

Question Number : 157 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Analogous organs have a:

Options :

1. Common embryonic origin but perform different functions
2. Common embryonic origin but perform similar functions
3. Different embryonic origin but perform different functions
4. Different embryonic origin but perform similar functions

Question Number : 158 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
presence of gill slits in the embryos of all vertebrates support the theory of:

Options :

1. Metamorphosis
2. Biogenesis
3. Organic evolution
4. Recapitulation

Question Number : 159 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Ketone bodies are the by products in metabolism of:

Options :

1. Carbohydrates
2. Protein
3. Fat
4. All of these

Question Number : 160 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
An increase in the P_{50} of an oxyhaemoglobin curve would result from a decrease in:

Options :

1. Oxygen
2. PH
3. Metabolism
4. Temperature

Question Number : 161 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
An alkaloid, which arrest cell division is obtained from:

Options :

1. Chrysanthamum
2. Colchicine
3. Dalbergia
4. Crocus

Question Number : 162 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Menstrual bleeding occur due to:

Options :

1. Decrease in level of Progesteron
2. Decrease in the level of GH
3. Decrease in the level of FSH
4. Decrease in the level of LH

Question Number : 163 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Apnea is:

Options :

1. Absence of breathing
2. Decreased ventilation
3. Increased ventilation
4. Laboured breathingn

Question Number : 164 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Pila has a:

Options :

1. Gill
2. Pulmonary sac
3. Both of them
4. None of these

Question Number : 165 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fishes belonging to Dipnoi are commonly called:

Options :

1. Lung fishes
2. Mud puppies
3. Flying fishes
4. Globe fishes

Question Number : 166 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The term deuterostomia is not applicable to:

Options :

1. Echinodermates
2. Cephalochordates
3. Annelida
4. Craniata

Question Number : 167 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Annelids doesn't have which of the following characters:

Options :

1. Triploblastic
2. Entercoelic coelom
3. Metamerism
4. Bilateral symmetry

Question Number : 168 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ribosomes in animal cell were discovered by:

Options :

1. Robinson and brown
2. Palade Claude & De-Duve
3. Robert Hook
4. K. R. Porter

Question Number : 169 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Sea feather is called:

Options :

1. Meandrin
2. Astrea
3. Pennatula
4. Porpita

Question Number : 170 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a women becomes pregnant second time the foetus is in danger when:

Options :

1. Mother is Rh +ve and foetus is Rh -ve
2. Mother is Rh -ve and foetus is Rh +ve
3. Father is Rh -ve and foetus is Rh +ve
4. Father is Rh +ve and foetus is Rh -ve

Question Number : 171 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ball and socket type of joint is also called:

Options :

1. Schindylesis
2. Rotatoria
3. Enarthrose
4. Ginglymi

Question Number : 172 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ectoderm forms:

Options :

1. Circulatory system
2. Central nervous system
3. Respiratory system
4. Notochord

Question Number : 173 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Illicium is modification of:

Options :

1. Dorsal fin
2. 1st dorsal spine

3. Barbules
4. Caudal fin

Question Number : 174 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following lays a cleidoic egg?

Options :

1. Man
2. Fish
3. Lizard
4. Frog

Question Number : 175 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The antigens A and B are present in:

Options :

1. RBC
2. Leucocytes
3. Blood platelets
4. Blood plasma

Question Number : 176 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Term "Speciation" was coined by:

Options :

1. Orator F Cook
2. Darwin - 1870
3. Lamarck - 1868
4. Morgon - 1850

Question Number : 177 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Immunoglobulin in the serum of a new born will be mostly:

Options :

1. I_gM of maternal origin
2. I_gG of maternal origin
3. I_gG of endogenous origin
4. I_gM of endogenous origin

Question Number : 178 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When the milk has been pasturised successfully, the milk will no longer contain the enzyme:

Options :

1. Polymerase
2. Phosphalase
3. Peroxdase
4. Pyrimidinase

Question Number : 179 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Commansalism is a symbiotic relationship between two organisms where:

Options :

1. Both parents benefit
2. One partner benefits and causes harm to other
3. One partner benefits but the other receives no harm
4. Both partners are disadvantaged

Question Number : 180 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first National Park in India is:

Options :

1. Royal Park
2. Yellow Stone Park
3. Jim Corbette Park
4. Kaziranga Park

Question Number : 181 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Silent valley having rare plants and animals is located in:

Options :

1. Karnataka
2. Utter Pradesh
3. Kerala
4. Andhra Pradesh

Question Number : 182 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The concept of "Biosphere Reserve" was evolved by:

Options :

1. Government of India
2. Zoological Survey of India
3. UNESCO
4. IUCN

Question Number : 183 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Grand old man of Intestine is:

Options :

1. Giardia
2. Entamoeba
3. Balantidium
4. Trichomonas

Question Number : 184 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Nuclear dimorphism is found in:

Options :

1. Ciliata
2. Sporozoa
3. Sarcodina
4. Zooflagellata

Question Number : 185 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Coprophagous animals are:

Options :

1. Blood feeder
2. Dung feeder
3. Eating faeces
4. Eating member of own species

Question Number : 186 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cross bridges of the sarcomere in skeletal muscle are made up of:

Options :

1. Actin
2. Myosin
3. Troponin
4. Tropomyosin

Question Number : 187 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Who discovered regeneration?

Options :

1. Huxley
2. Trembley
3. Lamarck
4. Morgan

Question Number : 188 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Morphallaxis is:

Options :

1. Healing of injury
2. Reconstruction of whole body
3. Growth of lost limb
4. Regeneration with the help of blastema

Question Number : 189 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following amino - acid has the greatest number of codons:

Options :

1. Proline
2. Leucine
3. Tryptophan
4. Aspartic acid

Question Number : 190 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The coenzyme involved in oxidative decarboxylation is:

Options :

1. Thiamine pyrophosphate
2. Biotin
3. NAD
4. Pyridoxal phosphate

Question Number : 191 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Thiamine deficiency leads to:

Options :

1. Scurvy
2. Beri-beri
3. Night blindness
4. Pellagra

Question Number : 192 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of these program is used to conserve a species facing extinction:

Options :

1. Captive breeding
2. Natural Resources
3. Sustainable use
4. Edge effects

Question Number : 193 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The only bone marrow cell - that never appear in peripheral blood is:

Options :

1. Myeloblast
2. Myelocyte
3. Lymphoblast
4. Megaloblast

Question Number : 194 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Glucose residues in amylose are linked by:

Options :

1. β 1 \rightarrow 4
2. α 1 \rightarrow 4
3. α 1 \rightarrow 6
4. β 1 \rightarrow 6

Question Number : 195 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a function of vertebrate liver:

Options :

1. Uptake and excretion of Bilirubin
2. Bile production
3. Release of Glycogen into the blood
4. Urea synthesis

Question Number : 196 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In insects, the effect of juvenile hormone is to:

Options :

1. Potentiate the effect of ecdysone
2. Oppose the effect of ecdysone
3. Effect maturation

4. Prevent maturation

Question Number : 197 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In order to increase conduction in a given nerve, one would:

Options :

1. Add myelin and increase diameter
2. Add Myelin and decrease diameter
3. Demyelinate and leave the diameter unchanged
4. Demyelinate and decrease diameter

Question Number : 198 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Adult bird normally possess only one functional:

Options :

1. Ureter
2. Ovary
3. Kidney
4. Testis

Question Number : 199 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the total oxygen capacity of blood:

Options :

1. 20 ml/dl
2. 10 ml/dl
3. 25 ml/dl
4. 15 ml/dl

Question Number : 200 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Peyer's patches are:

Options :

1. Lymphatic tissue in small intestine
2. Connective tissue distributed throughout the body
3. Dark patches present on the skin
4. Small enzyme secreting units present in liver