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Paper Id	Paper Name
58877546	BFUHS PMET 2016 Actual Shift 1

Question Paper Name: BFUHS PMET 2016 Actual Shift 1
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

In a system of units, velocity (V), Force (F) and time (T) are taken as fundamental units, then the dimensional formula of mass is

Options :

1. $[F^{-1} V T]$
2. $[F V^{-1} T]$
3. $[F V^{-1} T^{-1}]$
4. $[F^{2} V^{-1} T]$

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

The distance x (in metres) travelled by a particle in time t (in seconds) moving along a straight line is given by

$x = 4t\text{-}t^{2}$

How long would the particle travel before coming to rest?

Options :

1. 2m
2. 3m
3. 4m
4. 5m

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

The angle of projection of a projectile with the horizontal direction for which the horizontal range of the projectile is 4 times the maximum height attained by the projectile is

Options :

1. 30^{o}

2. 45^{o}

3. 60^{o}

4. 76^{o}

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

A vector $\overrightarrow{A}$ which has magnitude of 6 is added to a vector $\overrightarrow{B}$ which lies along x-axis. The resultant of two vectors $\overrightarrow{A}$ and $\overrightarrow{B}$ lies along y-axis and has magnitude twice that of the magnitude of $\overrightarrow{B}$. The magnitude of $\overrightarrow{B}$ is

Options :

1. $\frac{\sqrt{5}}{6}$

2. $\frac{6}{\sqrt{5}}$

3. $\frac{\sqrt{3}}{6}$

4. 8

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

A ball of mass 100g hits a smooth vertical wall normally with a velocity of 15m/s four times per second and rebounds each time with a velocity of 15m/s. The average force exerted on the wall is

Options :

1. 6N

2. 15N

3. 30N

4. 12N

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

An object is acted upon by a force of constant magnitude which is always perpendicular to the velocity of the object. The motion of the object takes place in a plane. It follows that the:

Options :

1. Velocity of the object is constant

2. acceleration of the object is constant

3. momentum of the object is constant

4. kinetic energy of the object is constant

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

A stationary object explodes into two parts of masses m_1 and m_2. If K_1 and K_2 be the kinectic enegies of masses m_1 and m_2 respectively after explosion, then the ratio $\left(\frac{K_1}{K_2}\right)$ is equal to:

Options :

1. $\frac{m_1}{m_2}$

2. $\left(\frac{m_1}{m_2}\right)^2$

3. $\frac{m_2}{m_1}$

4. $\left(\frac{m_2}{m_1}\right)^2$

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

Sand drops vertically at the rate of 1kg/s onto a conveyor belt moving horizontally with a velocity of 0.2 m/s. The extra power needed to keep the belt moving is

Options :

1. 0.04W
2. 0.02 W
3. 0.4W
4. 0.2W

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

Three forces $\vec{F_1}=(2\hat{i}+3\hat{j}-\hat{k})N$, $\vec{F_2}=(\hat{i}-3\hat{j}+4\hat{k})N$ and $\vec{F_3}$ are acting on an object to keep it in equilibrium. The force $\vec{F_3}$ is

Options :

1. $(3\hat{i}+3\hat{k})\,N$
2. $(3\hat{i}-3\hat{k})\,N$
3. $-(3\hat{i}-3\hat{k})\,N$
4. $-(3\hat{i}+3\hat{k})\,N$

Question Number : 10 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A spherical body A of mass 1 kg moving along a straight line with a velocity 10m/s collides elastically with a stationary spherical body B of mass 1kg. The velocity of the body B after collision is:

Options :

1. 10 m/s
2. 20m/s
3. Zero
4. 5 m/s

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

A block of mass m is placed on an inclined plane making an angle Ø with the horizontal. If μ be the coefficient of friction between the block and the inclined plane, then the frictional force acting on the block is

Options :

1. μ mg
2. μ mg sin Ø
3. μ mg cos Ø

4. μ mg tan Ø

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

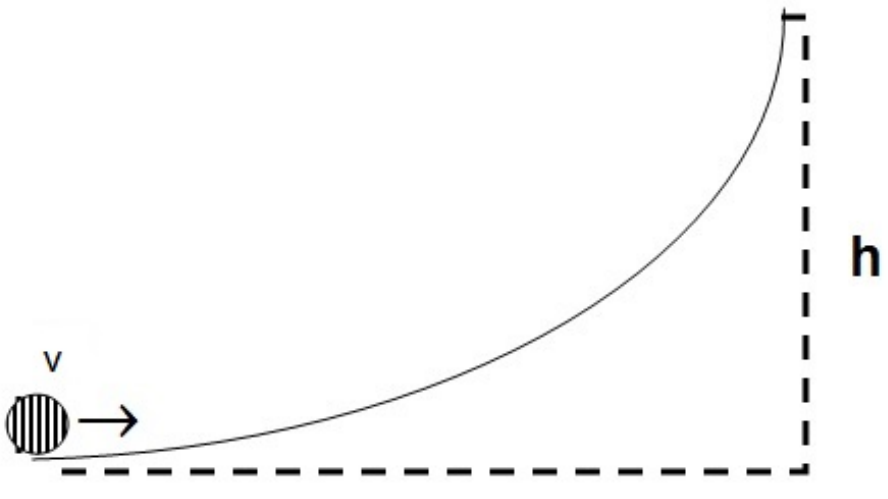
If the position vector of a particle of mass m is $\vec{r}_1$ and the position vector of a particle of mass $3m$ is $\vec{r}_2$, then the position vertor of the centre of mass of the system will be:

Options :

1. $\frac{1}{3}(\vec{r}_1 + 3\vec{r}_2)$
2. $\frac{1}{4}(\vec{r}_1 + 3\vec{r}_2)$
3. $\frac{(3\vec{r}_1 + \vec{r}_2)}{2}$
4. $\frac{1}{2}(\vec{r}_1 + 3\vec{r}_2)$

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

A small object of mass M, radius R and uniform density rolls up a curved surface with an initial velocity v as shown in



figure

It reaches upto a height of $\frac{7v^2}{10g}$ with respect to the initial position. The object is

Options :

1. a circular disc
2. a circular ring
3. a hollow sphere
4. a solid sphere

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

Two particles of mass M_1 and M_2 approach each other due to their mutual gravitational force only. Then the

Options :

1. acceleration of particle of mass M_2 is directly proportional to M_1
2. . acceleration of particle of mass M_2 is directly proportional to M_2

3. acceleration of particle of mass M_2 is inversely proportional to M_1

4. acceleration of both the particles are equal

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

According to Kepler's second law of planetary motion, "the line joining the sun and the planet sweeps out equal areas in equal intervals of time". This law is a consequences of the conservation of:

Options :

1. Linear momentum

2. Angular momentum

3. mechanical energy

4. mass

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

Equation of continuity for the streamline flow of an ideal fluid expresses the law of conservation of:

Options :

1. mass

2. energy

3. Linear mometum

4. angular momentum

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

Young's modulus of aluminium is 7×10^{10} N/m^2. The force needed to double the length of an aluminium wire of area of cross section 2.0 mm^2 is:

Options :

1. 1.4×10^{10} N

2. 1.4×10^{8} N

3. 1.4×10^{5}N

4. 1.4×10^{3} N

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

Which of the following statements is correct?

Options :

1. Viscosity of liquids decreases while that of gases increases with increase in temperature

2. Viscosity of liquids increases while that of gases decreases with increase in temperature

3. Viscosity of both liquids and gases decreases with increase in temperature

4. Viscosity of both liquids and gases increases with increase in temperature

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

The Efficiency of a carnot engine working between source temperature T and sink temperature 27^{o}C is 25%. The source temperature T is:

Options :

1. 300 K

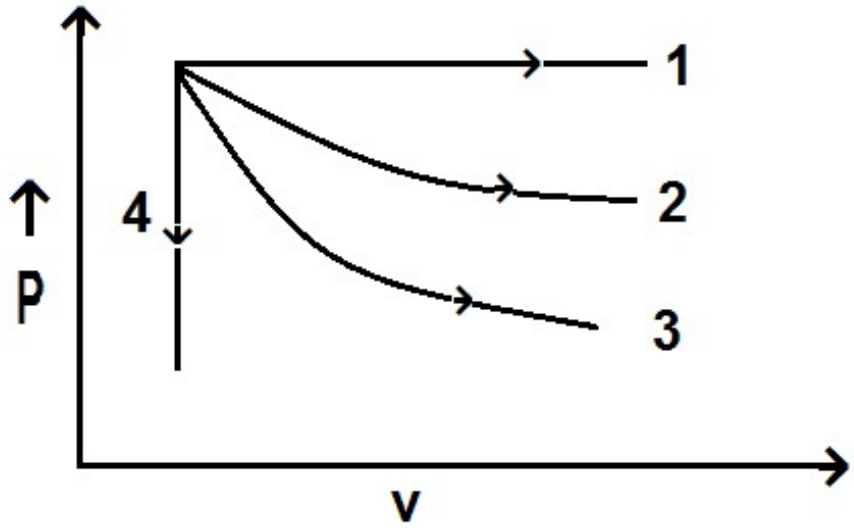
2. 400 K

3. 800 K

4. 1200 K

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

An ideal gas undergoes four different processes from the same initial state as shown in figure. four processes designated as 1, 2, 3 and 4 are adiabatic, iso baric, isochoric and isothermal



Out of 1, 2, 3 and 4 which one is isobaric?

Options :

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

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

The root mean square speed of a gas molecule at $27^{o}C$ is 'v'. What will be the temperature of the gas if the root mean square speed of the gas molecule is to be doubled?

Options :

1. 54^{o} C
2. 108^{o} C
3. 627^{o} C
4. 927^{o} C

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

The acceleration (a) and the displacement (x) of four particles 1, 2, 3 and 4 are related respectively as

1. $a = +4x$
2. $a = +4x^{2}$
3. $a = -4x$
4. $a = -4x^{2}$

which one of these particles executes simple harmonic motion?

Options :

1. 1.1

2. 2.2

3. 3.3

4. 4.4

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

If the average translational kinetic energy per molecule of hydrogen (molecular weight = 2) at 27^{o} C is E, then the average translational kinetic energy per molecule of oxygen (Molecular weight = 32) at 27^{o} C is:

Options :

1. 16 E

2. 4 E

3. E/4

4. E

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

An organ pipe of length L open at both ends vibrate in its first harmonic when sounded with a tunning fork of 512 Hz. The length of a pipe closed at one end so that it may vibrate in its third harmonic with the same tunning fork is:

Options :

1. 4L

2. 3L

3. $\frac{2L}{3}$

4. $\frac{3L}{2}$

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

A train is moving on a straight track with a velocity of 20 m/s. It is blowing a whistle at the frequency of 1200 Hz. The speed of sound in air is 320 m/s. The frequency heard by a person sitting in the train is:

Options :

1. 1238.6 Hz

2. 1280 Hz

3. 1200 Hz

4. 1128.2 Hz

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

If the speeds of microwaves, radiowaves, X-rays and gamms rays in vaccum are: V_1,V_2,V_3 and V_4 respectively, then

Options :

1. $v_1 > v_2 > v_3 > v_4$

2. $v_1 < v_2 < v_3 < v_4$

3. $v_1 = v_2 = v_3 = v_4$

4. $v_1 > v_2 < v_3 < v_4$

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

In a p-type semiconductor,

Options :

1. Electrons are majority carriers and trivalent atoms are dopants

2. Electrons are minority carriers and trivalent atoms are dopants

3. Holes are majority carriers and pentavalent atoms are deponts

4. Holes are minority carriers and trivalent atoms are dopants

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

To gain high output in AND gate, inputs A and B should be

Options :

1. A =0, B = 0

2. A=0, B =1

3. A =1, B = 0

4. A=1, B =1

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

The maximum amplitude of an amplitude modulated wave is 18V and minimum amplitude is 6V. The modulation index is:

Options :

1. 0.33

2. 0.4

3. 0.5

4. 0.75

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

Which of the following statements is correct?

Options :

1. The focal length of a glass lens decreaes if the wavelength of incident light increases

2. The focal length of a glass lens increases if the wavelength of incident light increases

3. The power of a glass lens increases if the wavelength of incident light increases

4. The focal length of a glass lens of refractive index 1.5 decreases if it is immersed in water of refractive index 4/3.

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

An alpha particle moving with a velocity v towards a nitrogen nucleus has the closest distance of approach equal to r. If the velocity of the alpha particle is doubled, the new value of the closest distance of approach would be

Options :

1. 4r

2. 2r

3. $\frac{r}{2}$

4. $\frac{r}{4}$

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

An oil drop of mass $3x10^{-14}$ kg carries a charge q. If the drop is stationary between two plates 10 mm apart having potential differences of 800 volt between them, then the value of q is: ($g=10\ m/s^2$)

Options :

1. 3.75×10^{-18} C

2. 2.75×10^{-18} C

3. 2.35×10^{-18} C

4. 2.0×10^{-18} C

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

The unit of electric permittivity of free space is:

Options :

1. $\text{newton.metre}^2 . \text{Coulomb}^2$
2. newton / coulomb
3. coulomb^2 / newton. metre^2
4. ampere / metre

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

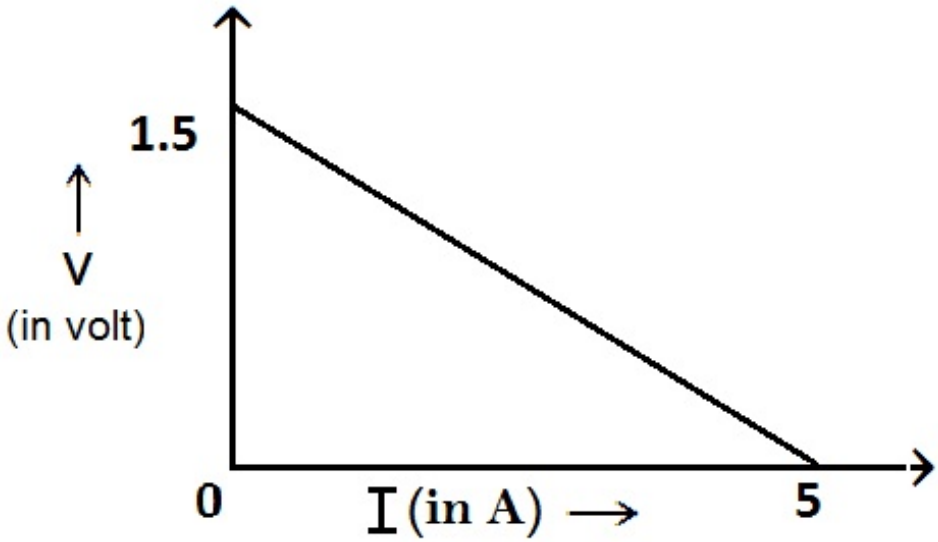
An electric bulb rated for 500W at 100V is used in a circuit connected to a 220V supply. The resistance that must be connected in series with the bulb to deliver 500 W is:

Options :

1. 6 ohm
2. 12 ohm
3. 24 ohm
4. 36 ohm

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

The variation of terminal potential difference V volt of a cell with current I is shown in figure given below:



The internal resistance of the cell is:

Options :

1. 0.1 ohm
2. 0.2 ohm
3. 0.3 ohm
4. 0.4 ohm

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

Two parallel plate capacitors of capacitances C and 3C are connected in parallel and charged to a potential difference V. The battery is then disconnected and the region between the plates of the capacitor of capacitance C is completely filled with a material of dielectric constant K. Now, the potential difference across the capacitors is:

Options :

1. $\frac{3V}{(K+3)}$
2. $\frac{(K+3)\,V}{3}$
3. $\frac{3V}{(K+2)}$
4. $\frac{4V}{(K+3)}$

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

Two charges of magnitude 2Q and - Q are situated at points (a,o,o) and (2a, o.o) respectively. The electric flux due to these charges through a sphere of radius '4a'with its centre at the origin is:

Options :

1. $\frac{2Q}{\in_o}$
2. $\frac{-Q}{\in_o}$
3. $\frac{Q}{\in_o}$
4. $\frac{3Q}{\in_o}$

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

The magnetic field intensity at the centre of a circular coil of radius r and carrying current I is B. If the radius of the coil is halved and the current through the coil is doubled, then the new value of the magnetic field intensity at the centre of the coil is:

Options :

1. 4B
2. 2B
3. B
4. $\frac{B}{4}$

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

The work done in rotating a magnetic dipole of dipole moment M placed in a uniform magnetic field of intensity B from the stable equilibrium position to the unstable equilibrium position is:

Options :

1. MB
2. 2 MB
3. -MB
4. -2 MB

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

Two coherent sources of light of intensity ratio 25:16 produce interference pattern. The intensity ratio of maximum and minimum of the interference pattern is:

Options :

1. 41: 9
2. 81 : 1
3. 9 : 1
4. 5 : 4

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

An unpolarized light of intensity I is incident on a pair of Nichol's prisms making an angle 30^{o} with each other. The intensity of the emerging light from the pair of prisms is:

Options :

1. $\frac{I}{2}$
2. $\frac{I}{4}$
3. $\frac{I}{8}$
4. $\frac{3I}{8}$

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

Light of frequency 'f'is falling on a metal surface of negligible work function. The maximum velocity of the electrons emitted from the metal surface is 'v'. The maximum velocity of the electrons emitted from the same metal surface, when light of fequency 9f falls on the metal surface is:

Options :

1. v
2. 2v
3. 3v
4. 9v

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

A particle of mass M at rest decays into two particles of masses m_1 and m_2 having velocities v_1 and v_2 respectively. The ratio of the de-Broglie wavelength of these particles is

Options :

1. $\frac{m_2}{m_1}$
2. $\frac{m_1}{m_2}$

3. $\frac{v_1}{v_2}$

4. 1

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

The energy of an electron in an orbit of hydrogen atom is -3.4eV. The angular momentum of the electron in the given orbit is:

Options :

1. $\frac{h}{2\pi}$

2. $\frac{h}{\pi}$

3. $\frac{3h}{2\pi}$

4. $\frac{2h}{\pi}$

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

When ${}_{90}Th^{232}$ decays to ${}_{82}Pb^{208}$, then n alpha particles and m beta particles are emitted. The values of n and m respectively are:

Options :

1. 6 and 4

2. 8 and 2

3. 4 and 4

4. 8 and 3

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

The decay constant of a certain radioactive material is 0.1733 per day. The time taken by the material to decay to 75% of its initial amount is:

Options :

1. 2 days

2. 4 days

3. 8 days

4. 16 days

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

The instantaneous current and voltage of an a.c. Circuit are given by

$I = (5 \sin 314t)$ A and

$V = 10 \sin (314 t + \pi/2)$ V

The power dissipation in the circuit is:

Options :

1. 50 W

2. 25 W

3. 0.2 W

4. zero

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

A particle moves in x-y plane in such a way that its x and y coordinates vary with time according to:

$x(t) = (t^2 - 3t)$ and $y(t) = (t^3 - 2t)$

The velocity of the particle at t = 3 second is

Options :

1. $(2\hat{i} + 27\hat{j})$
2. $(3\hat{i} + 25\hat{j})$
3. $(3\hat{i} - 25\hat{j})$
4. $(3\hat{i} + 4\hat{j})$

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

A 50 mH inductor, a 10 Micro Farad capcitor and a 20 ohm resistor are connected in series to a 200 V a.c. Source of frequency 50 Hz. The impedance of the circuit at electrical resonance is:

Options :

1. 12.5 ohm
2. 15.6 ohm
3. 18 ohm
4. 20 ohm

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

The spectral energy distribution of the sun has a maximum at 480 nm. If the temperature of the sun is 6000 K, then the temperature of a star for which this maximum is at 960 nm will be:

Options :

1. 12000 K
2. 8000 K
3. 3000 K
4. 2000 K

Chemistry

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

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

In an atom if

(a) n=3, /=2 , m=0, s=+1/2 ,

(b) n=3, m=0, s=+1/2 ,

(c) n=3, /=1, m=1, s=-1/2 ,

(d) n=2, /=0 , m=0 , s=+1/2 ,

the number of elctrons in a,b,c,d,are respectively.

Options :

1. 1,3,1,1

2. 5,3,1,1

3. 5,3,3,1

4. 1,1,1,1

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

Out of SF_4,CF_4,$Xe F_4$, IF_4^- which are having square planer geometry?

Options :

1. SF_4,$Xe F_4$

2. SF_4

3. XeF_4 IF_4^-

4. CF_4

Question Number : 53 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which out of the following have same bond order

Options :

1. CO , CN^-,NO^+, N_2

2. CO ,CN^- ,NO^+, O_2^+

3. O_2, O_2^+,NO^+

4. CO, CN^-, O_2^+

Question Number : 54 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following are iso structral with $Si O_4^{-4}$

Options :

1. NH_4^+ ,SCl_4, SO_4^{-2}, PO_4^{-3}

2. SCl_4

3. NH_4,SO^{-2}_4 ,PO_4^{-3}

4. SO^{-2}_4, PO^{-3}_4, SCl_4

Question Number : 55 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratio a/b (a,b are vander waal's constant) of a real gas has the dimension:-

Options :

1. At mol^{-1}

2. L mol^{-1}

3. At L mol^{-1}

4. At L mol^{-2}

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

Under Similar conditions how many ml of 1M NaOH + $\frac{M}{2}$ H_2SO4 should be mixed so that total volume of the solution is 100 ml and rise in Temprature is maximum

Options :

1. 67 ml,33ml
2. 50 ml , 50 ml
3. 37 ml,63 ml
4. 60 ml,40ml

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

In a closed vessel $A_{(s)} \rightleftharpoons 2B_{(g)} + 3C_{(g)}$ if the partial pressure of C is doubled, then the partial pressure of B will be

Options :

1. Half of original pressure
2. $\sqrt{\frac{1}{2}}$ of original pressure
3. $2\sqrt{\frac{1}{2}}$ of original pressure
4. $2\sqrt{2}$ of original pressure

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

Which of the following solutions will have pH=1

(a) 200 ml of $\frac{M}{10}$ HCl + 100 ml of $\frac{M}{10}$ NaOH

(b) 50 ml of $\frac{M}{10}$ HCl + 45 ml of $\frac{M}{10}$ NaOH

(c) 75 ml of $\frac{M}{5}$ HCl + 25 ml of $\frac{M}{5}$ NaOH

(d) 50 ml of $\frac{M}{10}$ HCl + 150 ml of $\frac{M}{20}$ H_2SO_4

Options :

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

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

Which of the following statement are not correct:-

(a) $La(OH)_3$ is less basic than $Lu(OH)_3$

(b)La is actually an element of transition series rather than lanthanides

(c)Atomic radius of Zr and Hf are almost equal because of lanthanide contraction

(d) The colour of $KMnO_4$ and $K_2Cr_2O_7$ is due to d-d transition

Options :

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

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

In which of the following pairs both ions are colured

Options :

1. Sc^{+2} , Co^{+2}

2. Ni^{+2} ,Cu^{+}

3. Ni^{+2}, Ti^{+3}

4. Sc^{+3} ,Ti^{+3}

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

Which of the following statements are correct:-

(a)$[Ni(CO)_4]$ is tetrahedral and paramagetic

(b)$[Ni(CN)_4]^{-2}$ is square planner and diamagnetic

(c)$[NiCl_4]^{-2}$ is tetrahedral and paramegntic

(d)$[Ni(Co)_4]$ is tetrahedral and diamegnetic

Options :

1. a

2. a,b

3. b,c,d

4. a,b,d

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

Mark the correct statements:

(a)in NO_3^- number of bond pairs and lone pairs on nigrogen atom are 4,1

(b) the acidic character of H_3PO_2, H_3PO_3 ,H_3PO_4 is in the order $H_3PO_2 > H_3PO_3 > H_3PO_4$

(c) Ammonium dichromate on heating gives NH_3

(d)H_3PO_2, H_3PO_3, H_3PO_4 are having same geometry

Options :

1. a,b

2. b,c

3. c,d

4. b,d

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

In F_2, N_2, O_2, Cl_2 , Br_2 , I_2, HCl, HBr , HI

(a) bond length is in the order $N_2 < O_2 < F_2 < Cl_2$

(b) bond strength :$N_2 > O_2 > F_2 > Cl_2$

(c) oxidizing character $F_2 > Cl_2 > Br_2 > I_2$

(d)acidic strength HF> HCl >HBr > HI

which of the following are correct statement

Options :

1. a,c,d

2. a,b

3. a,c

4. c,d

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

In KCl and NaCl have same type of Crystal lattice and if $r_k^+ / r_{cl}^- = 0.75$ and $r_{Na}^+ / r_{cl}^- = 0.5$, then the ratio of the sides of a unit cell of KCl and NaCl will be

Options :

1. 5:6
2. 4:3
3. 7:6
4. 2:3

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

0.005 M solution of aluminum sulphate is isotonic with 0.02 M solution of Glucose at same temprature. Degree of ionisation of aluminium sulphate will be

Options :

1. 80%
2. 50%
3. 75%
4. 70%

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

Rate law for a reaction A + B + C is given by $r \propto [A]^a [B]^b [C]^c$ on doubling the concentration of A, halving the concentration of B and increasing the Concentration of C four times . The ratio of new rate law to the original rate law will be

Options :

1. 2^{2c+a-b}
2. 2^{2c-a+b}
3. $1/2^{2c+a+b}$
4. none of these

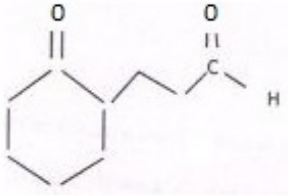
Question Number : 67 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The order of stability of different conformational isomers of ethylene glycol

Options :

1. Anti>Gauche>Eclipsed
2. Gauche>Anti>Eclipsed
3. Elisped>Anti>Gauche
4. none of these

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

IUPAC name of 

Options :

1. Cyclohexanone-2propanal

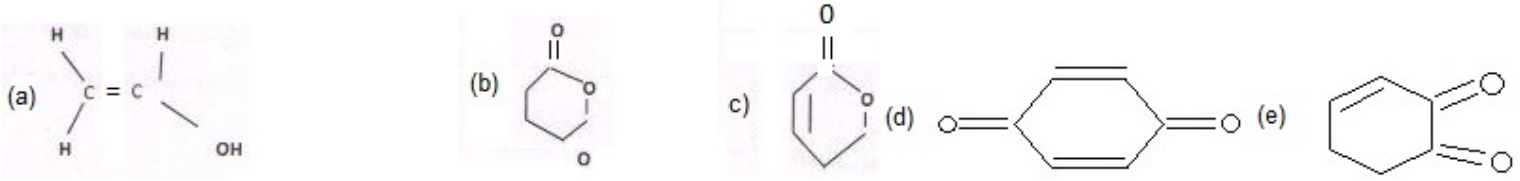
2. 2-Formyl Ethyl Cyclohoxane

3. 3-(2-oxo cyclohexyl) Propanal

4. 2- Formyl cyclohexanone

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

which of the following will not show tauto merisim



Options :

1. a,c,d

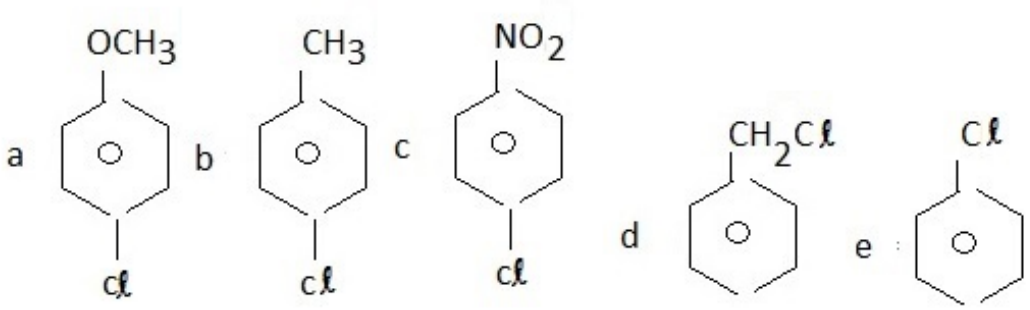
2. c,d

3. c,d,e

4. a,b,c,d

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

Order of reactivity toward nucleophilic subsititution in the following compound



Options :

1. d>c>e>b>a

2. c>e>b>d>a

3. c>a>b>e>d

4. a>b>d>c>e

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

A mixture of CH_4,N_2 O_2 are enclosed in a container 1L capacity at O^0C the total pressure of the mixture is 2660 mm of Hg .If the ratio of partial pressures of the gases is 1:4:2 respectively. Then what will be number of moles of O_2 present?

Options :

1. 1/22.4

2. 1.0

3. 0.1

4. 0.5

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

0.25 g of an organic compund was Kjeldelitised and NH_3 evolved in absorbed in 25 ml of 0.5 M H_2SO_4. The residual acid required 30ml of 0.5M NaOH sol. The % nitrogen in organic compund is

Options :

1. 14

2. 28

3. 56

4. 42

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

The number of P-O-P bonds/bridges in the structure of Phosphorous trioxide and phosphorous pentaoxide are respectivily

Options :

1. 6,6

2. 5,5

3. 3,5

4. 5,3

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

When mercuric iodide is added to an aquous sol. of KI, we observe

(a) rise in freezing point

(b) depression in freezing point

(c) elevation in boiling Point

(d)Depression in boiling point

Options :

1. a,c

2. b,d

3. a,d

4. b,c

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

pKa of weak acid in 5.2 pKb of weak base = 4.8, then pH of Aq. Sol. of corresponding salt will be

Options :

1. 7.2

2. 7.0

3. 6.8

4. 6.9

Question Number : 76 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\text{But-2 yne} + H_2 \xrightarrow{Pd/Baso4} [A]\ \text{But-2-ene}$$

$$\text{But-2yne} \xrightarrow{Na/liq\,NH_3} [B]\ \text{But-2-ene , then}$$

Options :

1. A will be cis product while B is trans

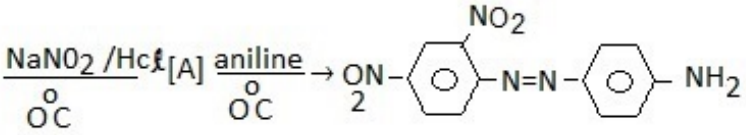
2. Both A and B are trans

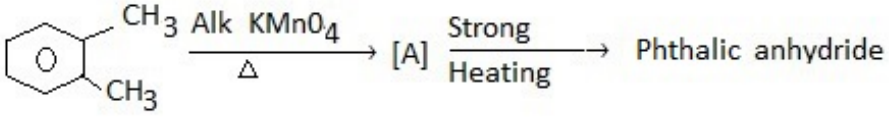
3. Both A and B are Cis

4. A is trans B is Cis

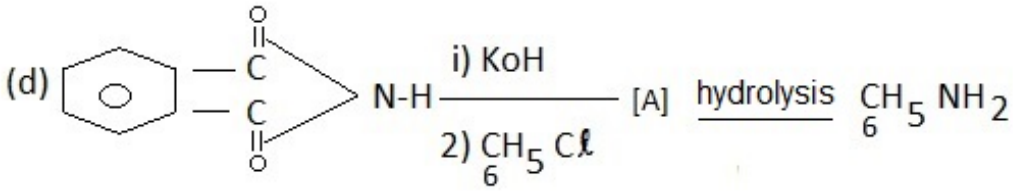
Question Number : 77 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Find the incorrect among the following

(a)- 2,4 Dinitro aniline 

(b) 

(C) $CH_3CONH_2 \xrightarrow{Br_2/NaOH} [A] \xrightarrow{NaNO_2/Hcl} C_2H_5OH$

(d) 

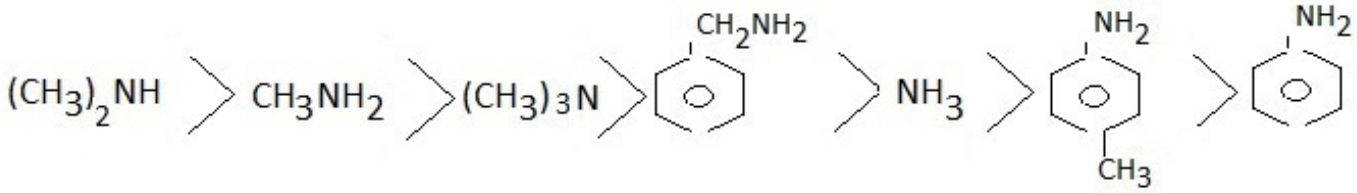
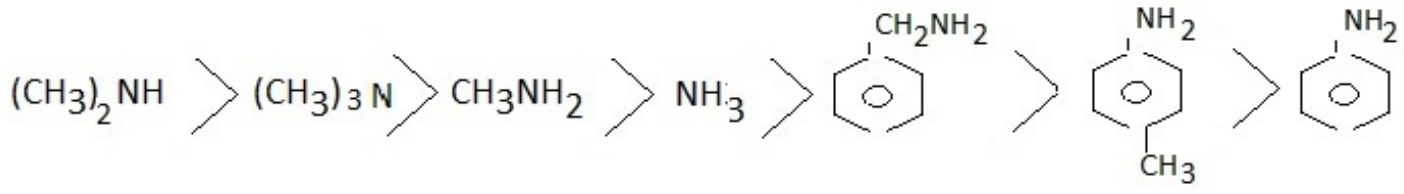
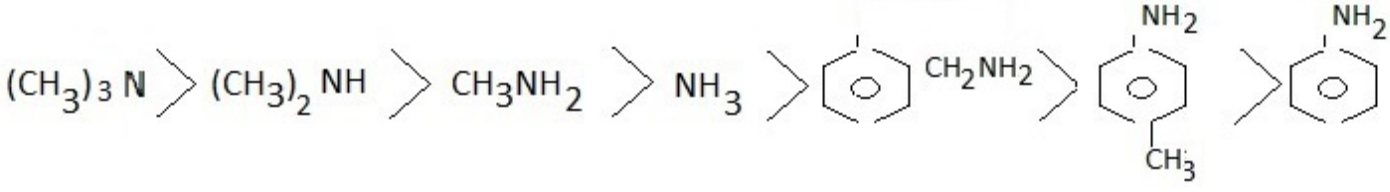
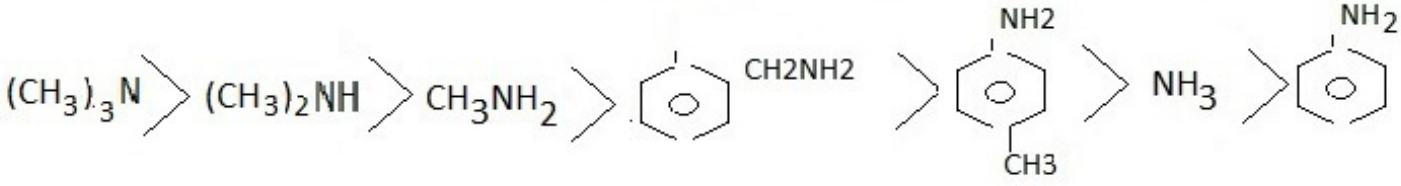
Options :

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

Question Number : 78 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The basic character of following amines is in the order

Options :

1. 
2. 
3. 
4. 

Question Number : 79 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The co-agulation of 50ml of colloidal solution of gold is completely prevented from precipitation by the addition of 0.1 g of a protective colloid to it before the addition of 1ml of 10% NaCl solution. The gold number of protective colloid is

Options :

1. 0.10

2. 20

3. 100

4. 2.0

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

Which of the following is correct statement

(a) Terylene is a polyamide and Nylon-66 is a polyester

(b)Terylene is a polyster and Nylon-66 is a polyamide

(c)the intermolecular forces are in the order Nylon>polythene>Buna-S rubber

(d) the monomer of strach is ∝(D) glucose

Options :

1. a,c,d

2. b,c

3. a,c

4. b,c,d

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

Excess of KI is added to Cu SO_4solution and then sodium thiosulphate solution is added to it. Which of the following statement is incorrect for the reaction

Options :

1. Cu_2 I_2 is formed

2. I_2 is formed

3. Cu $I_2$is formed

4. Sodium thiosulphate is oxidized

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

in the reaction $O_3 \rightleftharpoons O_2 + [0]$ fast

$O+O_3 \longrightarrow 2O_2$ slow

The rate of reaction is given by:--

Options :

1. $r=K[O_3]^2$

2. $r=K[O_3]^2[O_2]^{-1}$

3. $r=K[O_3][O_2]$

4. $r=K[O_3][O_2]^2$

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

If NaCl doped with 10^{-4} mole % of Al Cl_3 then the concentration of vacancies will be

Options :

1. $6.02X10^{14}$ mol^{-1}

2. $12.04X10^{15}mol^{-1}$

3. $12.04X10^{16}mol^{-1}$

4. $12.04X10^{17}mol^{-1}$

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

In a buffer solution of a weak acid and its salt with a strong base, when the ratio of concentration of salt to acid is increased by 10 times, then pH of the buffer solution

Options :

1. decreses 10 times

2. increases 10 times

3. decreases by 1

4. increases by 1

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

$\overset{\circ}{E}$ for $Cu^{+2} + 2e \rightarrow Cu$ $\overset{\circ}{E}=0.34V$ $Cu^{+} + e \rightarrow Cu$ $\overset{\circ}{E}=0.53V$

Then $\overset{\circ}{E}$ for $Cu^{+2} + e \rightarrow Cu^{+}$ will be

Options :

1. 0.15 V

2. 0.19 V

3. - 0.19V

4. 0.76 V

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

Sulphur monochloride undergoes slow hydrolysis to form

Options :

1. SO_2+HCl

2. HCl,SO_2,S

3. HCl,S,O_2

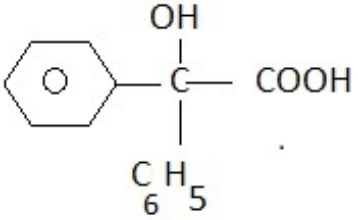
4. SO_3,HCl

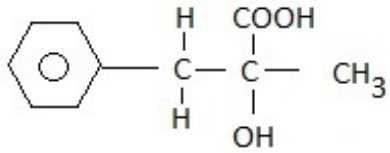
Question Number : 87 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

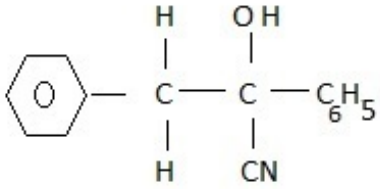
In a reaction $C_6H_5COOH \xrightarrow{PCl_5} [A] \xrightarrow[AlCl_3]{C_6H_6} [B] \xrightarrow[\text{Hydrolysis}]{HCN} [C]$

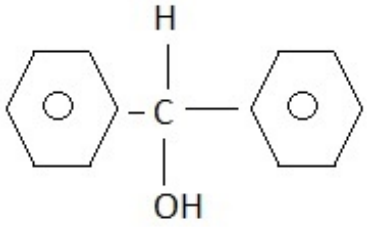
compound C is

Options :

1. 

2. 

3. 

4. 

Question Number : 88 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Colourless solution of salts KNO_3, $Zn(NO_3)_2$, $AgNO_3$, $ZnSO_4$ are given.A strip of copper in dipped in each solution. Which solution will turn blue?

Options :

1. $Zn(NO_3)_2$
2. $ZnSO_4$
3. KNO_3
4. $AgNO_3$

Question Number : 89 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first ionisation energy of Na, Mg , Al, Si ,P ,S are in the order

Options :

1. S>P>Si>Al>Mg>.Na
2. S>P>Si>Mg>Al>Na
3. P>S>Si>Al>Mg>Na
4. P>S>Si>Mg>Al>Na

Question Number : 90 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the complex ion$[Fe\ EDTA]^{-1}$, the Oxidation number of Fe,Co-ordination number of complex ion and geomaetry of the complex ion are repectively

Options :

1. 3,6 octahedral
2. 3,1 Linear
3. -1,1 tetrahedral
4. 3,1 octahedral

Question Number : 91 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Adipic acid $\xrightarrow[573\ K]{\text{strong heating}}$ [A] $\xrightarrow{Zn/Hcl}$ [B] , then

B is

Options :

1. hexanone
2. cyclohexanone
3. cyclopentanone
4. cyclopentane

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

Bromination of trans-2 butene leads to the formation of

Options :

1. d.form
2. meso compound
3. / form
4. both d and / form

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

Which of the following esters cannot undergo claisen condensation

Options :

1. CH_3COOCH_3
2. $CH_3COOC_2H_5$
3. $C_6H_5COOCH_3$
4. $C_6H_5CH_2COOCH_3$

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

An ester M.F ($C_3H_6O_2$) on hydrolysis gives an acid which reduces tollen reagent and an alchol which gives iodoform test . The ester is

Options :

1. methnyl acetate
2. methyl formate
3. ethyl formate
4. ethyl acetate

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

The correct sequence of the size of the following is in the order

Options :

1. $Mg^{+2} < Ne < Na^{+} < F^{-} < O^{-2}$
2. $Mg^{+2} < Na^{+} < Ne < O^{-2} < F^{-}$
3. $Mg^{+2} < Na^{+} < Ne < F^{-} < O^{-2}$

4. $Ar < Mg^{+2} < Na^{+} < F^{-} < O^{-2}$

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

Which of the following will produce CO_2 gas when treated with $NaHCO_3$ solution

a.	b.	c.	d.	e.
Phenol	2,4,6 trinitro phenol	Acetic acid	2,4,6 trimethyl phenol	ethyl alchol

Options :

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

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

Out of the following compounds which will give iodoform test

(a)Isopropyl alchol
(b)Iso butyl alchol
(c)secondary butyl alchol
(d) ethyl alchol
(e) Acetic acid

Options :

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

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

When a mixture of p-methyl benzaldehyde and formaldehyde is treated with aq Sol of conc KOH The product obtained are

Options :

1. pot p methyl benzoate + methyl alchol
2. p- methyl benzyl alchol +pot. Formate
3. p-methyl benzyl alchol + methyl alchol
4. pot p methyl benzoate + pot formate

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

The correct sequence of acidic character of the following

Options :

1. $HCOOH > CH_2FCOOH > CH_3COOH > C_6H_5COOH > C_6H_5CH_2COOH$
2. $CH_2FCOOH > HCOOH > CH_3COOH > C_6H_5COOH > C_6H_5CH_2COOH$
3. $HCOOH > CH_2FCOOH > C_6H_5COOH > CH_3COOH > C_6H_5CH_2COOH$
4. $CH_2FCOOH > HCOOH > C_6H_5COOH > C_6H_5CH_2COOH > CH_3COOH$

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

1 mole of N_2O_4 is enclosed in a vessel at 250k and at a pressure of 1 At P . If it is heated to 500K and 25% of N_2O_4, then decomposed to give NO_2. the resultant pressure will be

Options :

1. 1.25 At
2. 2.5 At
3. 2 At
4. 1 At

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

To which class space alga *Chlorella* belongs?

Options :

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

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

Who shared the Nobel prize for the discovery of DNA structure?

Options :

1. Watson, Crick and Franklin
2. Watson, Crick and Wilkins
3. Watson, Crick and Pauling
4. Watson and Crick only

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

Which one of the following is not a eukaryote?

Options :

1. Blue green algae
2. Green algae
3. Red algae
4. Brown algae

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

The naturalist Charles Darwin was inspired to write Origin of species when the ship (H.M.S.Beagle) in which he was travelling reached:

Options :

1. Hawaii islands
2. Galapagos islands

3. Antarctica

4. Great barrier reef

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

The sexual reproduction of lichen thallus belongs to:

Options :

1. Algal component only

2. Fungal component only

3. Both algal and fungal component

4. Not understood yet

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

All enzymes are proteins except:

Options :

1. Carbohydrates

2. Lipids

3. Nucleic acids

4. Ribozymes

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

The evolution of oxygen during photosynthesis is a function of :

Options :

1. Light reaction

2. Dark reaction

3. Respiratory influence

4. Both light and dark reaction

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

Which one of the following are known as amphibians of plant kingdom?

Options :

1. Angiosperms

2. Gymnosperms

3. Bryophytes

4. Pteridophytes

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

In genetic code the number of stop codons are :

Options :

1. Two

2. Three

3. Four

4. Five

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

When a cell undergoes meiosis the number of chromosomes in daughter cells will be:

Options :

1. Reduced to half

2. Increased to double

3. Remains unchanged

4. Distributes unequally

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

Who is known as father of plant tissue culture?

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 of the following statement is a characteristic feature of CAM plants?

Options :

1. Release Oxygen during day

2. Release Oxygen during night

3. Open their stomata during night.

4. Do not respire during day.

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

Which of the following act as biofertilizers?

Options :

1. Blue green algae

2. Green algae

3. Yellow algae

4. Red algae

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

When self pollination is prevented by some mechanical barrier the situation is known as:

Options :

1. Herkogamy

2. Dichogamy

3. Homogamy

4. Autogamy

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

In which plant group the phenomena of double fertilization is found?

Options :

1. Gymnosperms

2. Angiosperms

3. Bryophytes

4. Pteridophytes

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

Who coined the term ecology?

Options :

1. Kormondy
2. Haeckel
3. Warming
4. Elton

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

The magnesium in chlorophyll molecule is located in the:

Options :

1. Centre of porphyrin head
2. Corner of porphyrin head
3. Phytol tail
4. None of the all

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

The first compound light microscope was constructed by:

Options :

1. Hooke
2. Brown
3. Leeuwenhoek
4. Zernicke

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

In light microscope which lens does not take part in image formation?

Options :

1. Objective (5X)
2. Objective (4X)
3. Condenser
4. Ocular

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

In which phase of the cell cycle chromosome duplication occurs?

Options :

1. G_1
2. G_2
3. S
4. M

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

Which one of the following statement is correct about atmospheric ozone?

Options :

1. It act as protector
2. It act as destroyer
3. It act as both protector and destroyer
4. It has no role in biosphere

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

Mendel's laws of heredity were rediscovered by:

Options :

1. Hugo de Vries
2. Carl Correns
3. Tschermak
4. All of these

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

Which set of pigments are involved in green plant photosynthesis ?

Options :

1. Chlorophylls, Carotenoids and Anthocyanins
2. Chlorophylls, Carotenoids and Betacyanins
3. Chlorophylls, Carotenoids and Phycobilins
4. Chlorophylls, Carotenes and Xanthophylls

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

Which Indian molecular biologist was awarded Nobel prize for the discovery of genetic code?

Options :

1. H.G. Khorana
2. V. Ramakrishnan
3. S.R. Kashyap
4. C.V. Raman

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

The occurrence of relatively definite sequence of communities over a period of time in the same area is known as:

Options :

1. Change in biodiversity
2. Ecosystem degradation
3. Ecological succession
4. Economic succession

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

Which statement is more correct about genetic code:

Options :

1. It is absolutely universal
2. It is nearly universal
3. It is not universal
4. It is obsolete and of no use

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

In which of the following angiosperm family cruciform corolla is found?

Options :

1. Malvaceae
2. Brassicaceae
3. Ranunculaceae
4. Solanaceae

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

The graphic representation of trophic structure and function at various levels are known as:

Options :

1. Food web
2. Trophic levels
3. Ecological pyramids
4. Pyramids

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

What type of toxicity is being experienced by survivors of Nagasaki and Hiroshima?

Options :

1. Radioactive
2. Cosmic
3. Ultraviolet
4. Infrared

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

Which one of the following metal ion was responsible for Minamata epidemic in Japan and Sweden?

Options :

1. Mercury
2. Magnesium
3. Manganese
4. Cadmium

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

In which state Corbett tiger reserve is situated ?

Options :

1. Uttar Pradesh
2. Madhya Pradesh
3. Andhra Pradesh
4. Arunachal Pradesh

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

The use of living organisms for removal of pollutants from the biosphere is called:

Options :

1. Green movement
2. Phytoremediation
3. Bioremediation
4. Remediation

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

India has ten biogeographic zones . Therefore it can be concluded that our country is:

Options :

1. Rich in biodiversity
2. Poor in biodiversity
3. Moderate in biodiversity

4. None of these

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

In an experiment the gene of bioluminescence from fire fly has been successfully transferred in to a plant as result of which it started to glow. In the terminology of molecular genetics this plant is called :

Options :

1. Firefly plant
2. Hybrid plant
3. Transgenic plant
4. Bioluminescent plant

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

The seeds swell when placed in water for few hours . This phenomena is known as:

Options :

1. Imbibition
2. Diffusion
3. Osmosis
4. Absorption

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

Xerophytes are the plants which grow in:

Options :

1. Dry areas
2. Water
3. Land
4. Places where land and water meet

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

The experiment of Hershey-Chase proved that:

Options :

1. Protein is genetic material
2. DNA is genetic material
3. DNA replication is conservative
4. One gene synthesizes one enzyme

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

In Operon model the function of regulator gene is to produce:

Options :

1. Repressor
2. Inducer
3. Co-repressor
4. RNA

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

Who were the discoverers of Transduction?

Options :

1. Zinder and Lederberg

2. Zinder and Tautam

3. Zinder and Griffith

4. Zinder and Zinder

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

Which of the following has revolutionized the discipline of Biotechnology?

Options :

1. Restriction Endonucleases

2. Discovery of DNA structure

3. Recombinant DNA

4. All of these

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

What should be the minimum number of traits taken into consideration to prove Mendel's law of independent assortment?

Options :

1. One

2. Two

3. Three

4. Four

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

What is the normal level of ploidy in the endosperm of angiosperms?

Options :

1. N

2. 2N

3. 3N

4. 4N

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

From evolutionary point of view the tendrils of pea plant and grape vine are:

Options :

1. Homologous organs

2. Analogous organs

3. Connecting links

4. Missing links

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

For the proper growth of a plant the elements required in minute quantity as compared to other elements are known as:

Options :

1. Option (A) Microelements

2. Option (B) Essential elements

3. Necessary elements

4. Both Option (A) and Option (B)

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

With the help of carbon dating technique which one of the following can be measured?

Options :

1. Age of a fossil
2. Age of a rock
3. Age of a monument
4. Age of the universe

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

Histones are group of proteins which are rich in basic amino acids and they perform the function of:

Options :

1. DNA Coiling
2. RNA Coiling
3. protein Coiling
4. Nucleic acid coiling

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

In Miller's experiment about origin of life the flask containing water mimicked:

Options :

1. Sea
2. River
3. Pond
4. None of these

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

The packet of thylakoids in a chloroplast is called:

Options :

1. Fret channels
2. Granum
3. Stroma thylakoid
4. Photosynthetic thylakoid

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

Which one of following pair of organelles are semiautonomous?

Options :

1. Mitochondria and Chloroplast
2. Mitochondria and Golgi body
3. Mitochondria and Endoplasmic reticulum
4. Mitochondria and Lysosomes

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

The function of electron transport chain in both mitochondria and chloroplast is to develop:

Options :

1. Mineral gradient
2. Proton gradient
3. Aqueous gradient
4. Protein gradient

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

Bacteriophage is the name given to a:

Options :

1. Bacterium that infects a higher plant cell
2. Virus that infects a bacterium
3. Bacterium which infects an animal cell
4. An organelleof the bacterium

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

Abiogenesis means:

Options :

1. Origin of life from non-living organisms
2. Origin of life from living organisms
3. Origin of viruses and microbes
4. Spontaneous generation

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

Infective stage of Plasmodium is:

Options :

1. Trophozoite
2. Sporozoite
3. Merozoite
4. Schizoite

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

Gut is found in all but one of the following taxonomic groups of Platyhelminlthes

Options :

1. Digenea
2. Cestoda
3. Polycladida
4. Monogenia

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

Languo is:

Options :

1. A feather at the junction of rachis and quill
2. A centrum feather present on tail region
3. Coating of hairs on epidermies of man
4. A coating of fine hair with which the body of mammals is covered during foetal development

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

The enzyme invertase hydrolyses:

Options :

1. Sucrose into glucose and fructose
2. Cellulose into starch
3. Glucose into sucrose
4. Starch into sucrose

Question Number : 157 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

"Portuguese man of war" is a:

Options :

1. Soldier
2. Sponge
3. Solitary Polymorphic coelentrate
4. colomal coelenterate

Question Number : 158 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ceruminous or wax producing glands are modified:

Options :

1. Aporcrine sweat gland
2. Merocrine sweat gland
3. holocrine sebaceous gland
4. Aprocrine sebaceous gland

Question Number : 159 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The only true skin gland of the birds are :

Options :

1. Sweat Gland
2. Sebaceous Gland
3. Uropygial Gland
4. Femoral Gland

Question Number : 160 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The term "hormone" was coined in 1905 by:

Options :

1. E. H. Starling
2. M. Marcillo
3. W. Klittakar
4. T. Boucher

Question Number : 161 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Respiratory system is derived from:

Options :

1. Electroderm
2. Meroderm
3. Endoderm
4. Chorda Meroderm

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

Neuromotor system found in Paramecium Controls:

Options :

1. Degestion in Paramecium
2. Nervous System in Paramecium
3. Locomotion in Paramecium

4. Osmorgulation in Paramecium

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

"Glass sponge" belongs to class:

Options :

1. Calcarea
2. Hexactinellida
3. Tetractinellida
4. Demospongia

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

Asexual reproduction in sponges takes place with the help of:

Options :

1. Multiple Fission
2. Binary Fission
3. Gemmule formation
4. Germmae formation

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

What will happen if hydra is cut transversly into two halves:

Options :

1. Build up the lost part
2. Tend to reunite
3. Cut ends get healed
4. Both halves die

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

"Lasso" is a structure found in:

Options :

1. Nutritive Muscular cell
2. Epilthelio muscular cell
3. Sensory cell
4. Nematoblasts

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

A progiottid of Taenia is called Gravid only when it has:

Options :

1. Both male and female reproductive organs well developed
2. Only female organs well developed
3. Well branched uterus filled with eggs
4. Become dead

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

Rhabditiform larva is a stage in the life cycle of:

Options :

1. Taenia
2. Filaria

3. Ascaris

4. Wuchereria

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

Lateral hearts in Earthworm are situated in:

Options :

1. 7^{th} and 9^{th} segments

2. 10^{th} and 11^{th} segments

3. $9^{th}$and 14^{th} segments

4. 14^{th}, 15^{th} and 16^{th} segments

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

Arolium in Cockroach helps in:

Options :

1. Digestion

2. Respiration

3. Locomotion

4. Reproduction

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

Natural Parthenogenesis occurs in:

Options :

1. Honey Bee

2. Silk- Worm

3. Earthworm

4. All insects

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

Which of the following disease is caused by Nosema bombycis:

Options :

1. Pebrine

2. Flacherie

3. Grasserie

4. Muscadine

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

Eyes of the molluscan group that resembles vertebrate eyes:

Options :

1. Pelecypoda

2. Cephalopoda

3. Gastropoda

4. Scaphopoda

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

Most primitive among following Mollusc is:

Options :

1. Nautilus
2. Neopilina
3. Chiton
4. Patella

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

When a single gene may express more than one phenotypic effect. This phenomenon is called:

Options :

1. Multiple Allelism
2. Pleiotropy
3. Co-dominance
4. Polygeny

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

The amino acid attaches to the transfer RNA at its:

Options :

1. 5'- end
2. Anticodon site
3. 3'- end
4. DHU Loop

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

The formation of mesodern as evaginated sacs from the archenteron is characteristic of:

Options :

1. Pentaceros
2. Pila
3. Palamnaeous
4. Physalia

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

Which one is a link between chordates and Non-Chordates?

Options :

1. Crocodilia
2. Sphenodon
3. Tadpole larva
4. Balanoglossus

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

Petromyzon is:

Options :

1. Anadromous
2. Catadromous
3. Nodromous
4. Potamodromous

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

Which one of the following categories of animals is correctly described with no single exception in it?

Options :

1. All reptiles possess scales have a three chambered heart and are cold -blooded (Poikilothermal)
2. All bony fishes have four pairs of gills and an operculum on each side
3. All sponges are marine and have collared cells
4. All mammals are viviparous and possess diaphragm for breathing

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

Velum is found in:

Options :

1. Option (a) Herdmania
2. Option (b) Amphioxus
3. Option (c) Branchiostoma
4. Both option (b) and option (c)

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

You are watching a horror movie and you notice your heart is beating fast and mouth is dry. It is because of:

Options :

1. Option (a) Fight and flight response
2. Option (b) Autonomic nervous system
3. Option (c) Sympathetic nervous system
4. Both (a) and (c)

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

The muscle band that remains unchanged during contraction and relaxation of the skeletal muscle is:

Options :

1. I
2. H
3. A
4. A Line

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

Somatostatin is a hormone secreted by hypothalamus. It inhibits th secreation of:

Options :

1. Thyroxine
2. GH (Growth Hormone)
3. Vasopressin
4. ACTH

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

Ischihara chart is used to detect:

Options :

1. Eye sight
2. Colour Blindness
3. Diabetes
4. Tuberculosis

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

There is trisomy of 13 Chromosomes characterised by mental retardation, sloping forhead, deformed face, polydactyly, cardiac defects etc. The syndrome is:

Options :

1. Klinefelter syndrome
2. Patau's syndrome
3. Edwards syndrome
4. Turner's syndrome

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

Who is known as the Father of Physiological Genetics or the Father of Biochemical Genetics:

Options :

1. Slatyer
2. Charles Elton
3. Taylor
4. Archibald Garrod

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

Whose experiments cracked the genetic code and discovered unequivocally that genetic code is a triplet:

Options :

1. Nirenberg and Methaei
2. Hershey and chase
3. Morgan and Sturtevant
4. Beadle and Tatum

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

Desmosomes are:

Options :

1. Specialised thickened areas that facilitate cell adhesion
2. Site for storage of lecithin and pigment
3. Reservoir for peroxidises and catalases
4. Found in E-Coli and Streptococus

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

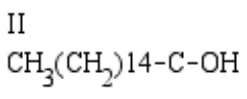
Achilles tendon is associated with:

Options :

1. Gluteus Muscle
2. Hamstring Muscle
3. Quadricep Muscle
4. Gastrocnemius Muscle

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

Given below is the chemical formula of:



Options :

1. Palmitic acid
2. Stearic acid
3. Glycerol
4. Galactose

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

Decline in the activity of the enzyme Hexokinase by Glucose -6- phosphate is caused by:

Options :

1. Non- Competetive inhibition
2. Competetive inhibition
3. Allosteric Modulator
4. Denaturation of enzyme

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

Some of the free energy released in the mitochondrial electron trasport chain can be harnessed to the formation of Adonosine Trisulphate (ATP). How many moles of ATP can be formed per mole pair of electrons transferred from reduced nicotinamide - adenine dinucleotide to oxygen:

Options :

1. 0
2. 1
3. 2
4. 3

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

Converson of Glucose -6- phosphate requires ATP yet critically ill patients are given glucose solution intravenously instead of glucose - 6 - phosphate . The reason for not giving glucose -6- phosphate directly is:

Options :

1. G -6- phosphate is degraded very fast in the blood before it enters the cells
2. Commercial preparation of G -6- phosphate are always contaminated with toxic chemicals
3. High cost of G -6- phosphate
4. Cells can't take up G -6- phosphate

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

Fatty acids are transported into the mitocondria bound to:

Options :

1. Thiokinase
2. Coenzyme A
3. Acetyl -Co A
4. Carnitine

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

In the absence of bilesalts, glycocholic and taurocholic acid, the intestinal absorption of all the following would be impeded except:

Options :

1. Riboflavin
2. Oleic acid
3. Cholestrol

4. Vitamin A

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

Silent mutations in DNA are not expressed due to:

Options :

1. Universality of genetic code
2. Non- ambiguous nature of genetic code
3. Degeneracy of genetic code
4. DNA is linear

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

The gastric gland cell whose absence could lead to pernicious anamenia is the:

Options :

1. Chief Cell
2. Globet Cell
3. Mucous Cell
4. Parietal Cell

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

Which protein is described as the "Guardian of the genome":

Options :

1. p53
2. Cyclin D
3. CDK 4
4. Rb

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

The phenomenon of genetic drift is most likely to occur in populations that are:

Options :

1. Small and inbred
2. Undergoing gene flow
3. Allopatric
4. Lage and panmictic