CBSE EXAMINATION PAPER-2011

NEET-ZOOLOGY

(Solved)

Time allowed : 3 hours | Maximum Marks : 800

General Instructions :

Read the following instructions carefully and follow them :

i. This question paper contains **200 questions.** All questions are **compulsory.**

ii. This question paper is divided into **1 sections.**

iii. **Section A** – questions number **1 to 200** are multiple choice questions

iv. There is no overall choice given in the question paper. However, an internal choice has been provided in few questions.

v. Use of calculator is NOT allowed.

Section A

Question 1.

A body is moving with velocity 30 m/s towards east. After 10 seconds its velocity becomes 40 m/s towards north. The average acceleration of the body is

[4 Marks]

(A) 1 m/s^2

(B) 7 m/s^2

(C) 5 m/s^2

(D) 7 m/s^2

Question 2.

A boy standing at the top of a tower of 20m height drops a stone. Assuming g=10 ms^{-2}, the velocity with which it hits the ground is

[4 Marks]

(A) 5.0 m/s

(B) 40.0 m/s

(C) 10.0 m/s

(D) 20.0 m/s

Question 3.

A missile is fired for maximum range with an initial velocity of 20 m/s. If g=10 m/s^2 the range of the missile is

[4 Marks]

(A) 60m

(B) 20m

(C) 50m

(D) 40m

Question 4.

A particle moves in a circle of radius 5 cm with constant speed and time period 0.2π s. The acceleration of the particle is

[4 Marks]

(A) 15 m/s^2

(B) 25 m/s^2

(C) 5 m/s^2

(D) 36 m/s^2

Question 5.

A body of mass M hits normally a rigid wall with velocity V and bounces back with the same velocity. The impulse experienced by the body is

[4 Marks]

(A) zero

(B) 2MV

(C) 1.5MV

(D) MV

Question 6.

A person of mass 60 kg is inside a lift of mass 940 kg and presses the button on control panel. The lift starts moving upwards with an acceleration 1.0 m/s^2. If g=10 ms^{-2} the tension in the supporting cable is

[4 Marks]

(A) 9680N

(B) 8600N

(C) 11000N

(D) 1200N

Question 7.

The potential energy of a system increases if work is done

[4 Marks]

(A) upon the system by a conservative force

(B) by the system against a non conservative force

(C) upon the system by a non conservative force

(D) by the system against a conservative force

Question 8.

A body projected vertically from the earth reaches a height equal to earth's radius before returning to

the earth. The power exerted by the gravitational force is greatest

[4 Marks]

(A) it remains constant all through

(B) at the instant just before the body hits the earth

(C) at the highest position of the body

(D) at the instant just after the body is projected

Question 9.

The instantaneous angular position of a point on a rotating wheel is given by the equation $\theta(t) = 2t^3 - 6t^2$. The torque on the wheel becomes zero at

[4 Marks]

(A) t = 0.25s

(B) t = 2s

(C) t = 1s

(D) t = 0.5s

Question 10.

The moment of inertia of a thin uniform rod of mass M and length L about an axis passing through its midpoint and perpendicular to its length is I_0. Its moment of inertia about an axis passing through one of its ends and perpendicular to its length is

[4 Marks]

(A) $I_0 + ML^2$

(B) $I_0 + ML^2/2$

(C) $I_0 + ML^2/4$

(D) $I_0 + 2ML^2$

Question 11.

A planet moving along an elliptical orbit is closest to the sun at a distance r_1 and farthest away at a distance of r_2. If v_1 and v_2 are the linear velocities at these points respectively, then the ratio v_1/v_2 is

[4 Marks]

(A) r_1/r_2

(B) $(r_2/r_1)^2$

(C) r_2/r_1

(D) $(r_1/r_2)^2$

Question 12.

During an isothermal expansion, a confined ideal gas does -150 J of work against its surroundings. This implies that

[4 Marks]

(A) 150 J heat has been removed from the gas

(B) no heat is transferred because the process is isothermal

(C) 150 J of heat has been added to the gas

(D) 300 J of heat has been added to the gas

Question 13.

When 1 kg of ice at 0°C melts to water at 0°C, the resulting change in its entropy, taking latent heat of ice to be 80 cal /°C , is

[4 Marks]

(A) 8×104 cal/K

(B) 273 cal/K

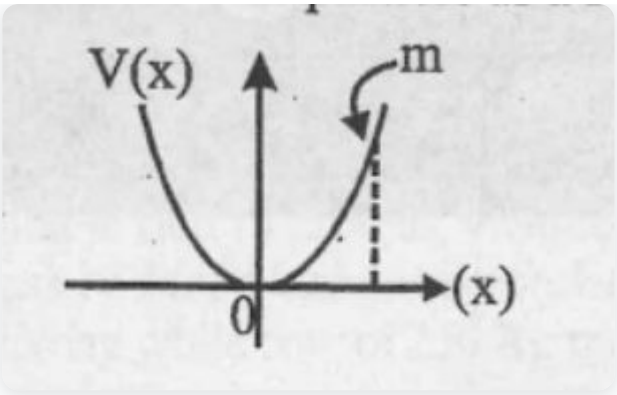
(C) 80 cal/K

(D) 293 cal/K

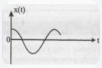
Question 14.

A particle of mass m is released from rest and follows a parabolic path as shown. Assuming that the displacement of the mass from the origin is small, which graph correctly depicts the position of the particle as a function of time

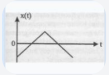
[4 Marks]



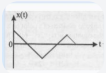
(A)



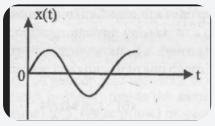
(B)



(C)



(D)



Question 15.

Out of the following functions, representing motion of a particle, which represents SHM?

(A) $y = \sin(\omega t) - \cos(\omega t)$

(B) $y = \sin^3(\omega t)$

(C) $y = 5\cos(3\pi/4 - 3\omega t)$

(D) $y = 1 + \omega t + \omega^2 t^2$

[4 Marks]

(A) Only (A) and (B)

(B) Only (A) and (C)

(C) Only (D) does not represent SHM

(D) Only (A)

Question 16.

Two waves are represented by the equations $y_1 = a \sin(\omega t + kx + 0.57)$ m and $y_2 = a \cos(\omega t + kx)$ m, where x is in meter and t in sec. The phase difference between them is

[4 Marks]

(A) 1.0 radian

(B) 1.25 radian

(C) 1.57 radian

(D) 0.57 radian

Question 17.

Sound waves travel at 350 m/s through a warm air and at 3500 m/s through brass. The wavelength of a 700 Hz acoustic wave as it enters brass from warm air

[4 Marks]

(A) decreases by a factor 20

(B) increases by a factor 10

(C) increases by a factor 20

(D) decreases by a factor 10

Question 18.

A charge Q is enclosed by a Gaussian spherical surface of radius R. If the radius is doubled, then the outward electric flux will

[4 Marks]

(A) be doubled

(B) remain the same

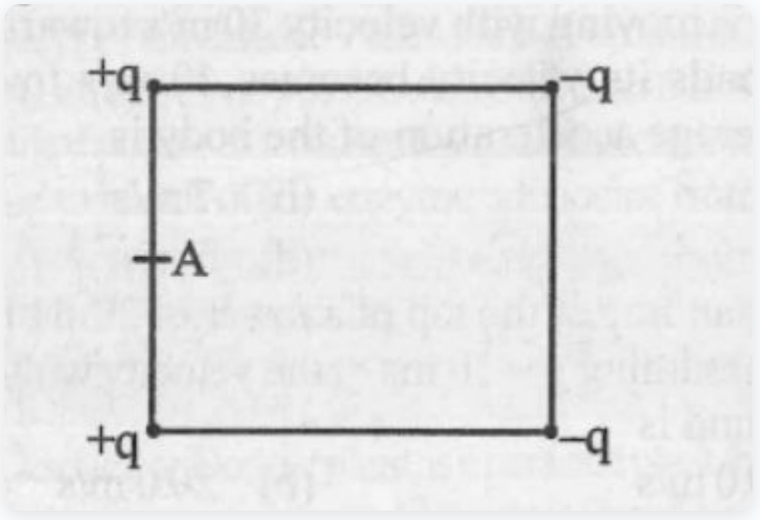
(C) increase four times

(D) be reduced to half

Question 19.

Four electric charges +q, +q, -q and -q are placed at the corners of a square of side 2L. The electric potential at point A, midway between the two charges +q and +q, is

[4 Marks]



(A) $(1/4\pi\varepsilon_0)\ (2q/L)\ (1 + \sqrt{5})$

(B) $(1/4\pi\varepsilon_0)\ (2q/L)\ (1 + 1/\sqrt{5})$

(C) $(1/4\pi\varepsilon_0)\ (2q/L)\ (1 - 1/\sqrt{5})$

(D) zero

Question 20.

A current of 2A flows through a 2Ω resistor when connected across a battery. The same battery supplies a current of 0.5 A when connected across a 9Ω resistor. The internal resistance of the battery is

[4 Marks]

(A) 1 Ω

(B) 1/4 Ω

(C) 1/3 Ω

(D) 0.5 Ω

Question 21.

The rate of increase of thermo-e.m.f. with temperature at the neutral temperature of a thermocouple

[4 Marks]

(A) is negative

(B) depends upon the choice of the two materials of the thermocouple

(C) is zero

(D) is positive

Question 22.

A uniform electric field and uniform magnetic field are acting along the same direction in a certain region. If an electron is projected in the region such that its velocity is pointed along the direction of fields, then the electron

[4 Marks]

(A) speed will increase

(B) will turn towards left direction of motion

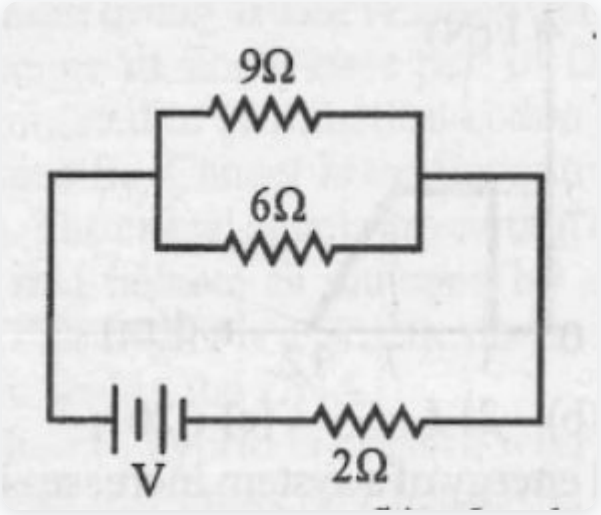
(C) speed will decrease

(D) will turn towards right of direction of motion

Question 23.

If power dissipated in the 9-Ω resistor in the circuit shown is 36 watt, the potential difference across the 2-Ω resistor is

[4 Marks]



(A) 4 volt

(B) 10 volt

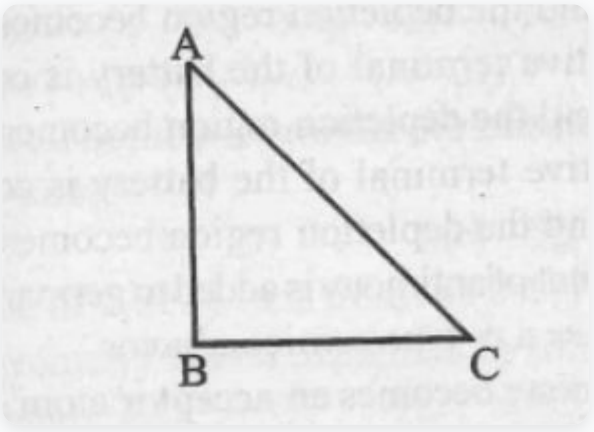
(C) 8 volt

(D) 2 volt

Question 24.

A current carrying loop in the form of a right angle isosceles triangle ABC is placed in a uniform magnetic field acting along AB. If the magnetic force on the arm BC is F, what is the force on the arm AC?

[4 Marks]



(A) -□□

(B) √2 □□

(C) □□

(D) -√2 □□

Question 25.

There are four light-weight-rod samples A, B, C, D separately suspended by threads. A bar magnet is slowly brought near each sample and the following observations are noted:

(i) A is feebly repelled

(ii) B is feebly attracted

(iii) C is strongly attracted

(iv) D remains unaffected.

Which one of the following is true?

[4 Marks]

(A) B is of a paramagnetic material

(B) C is of a diamagnetic material

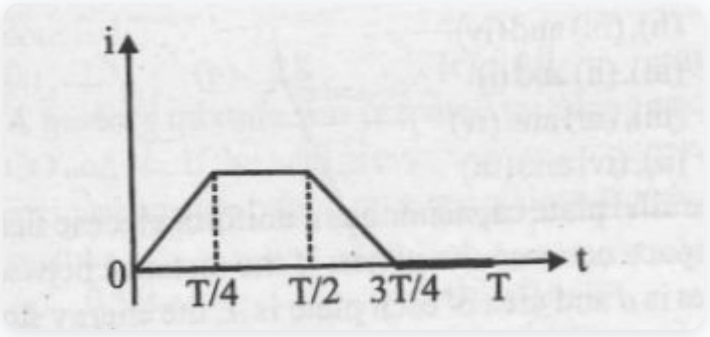
(C) A is of a non-magnetic material

(D) D is of a ferromagnetic material

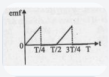
Question 26.

The current i in a coil varies with time as shown in the figure. The variation of induced emf with time would be

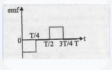
[4 Marks]



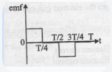
(A)



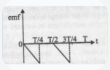
(B)



(C)



(D)



Question 27.

In an ac circuit an alternating voltage e = 200√2 sin 100t volts is connected to a capacitor of capacity 1 μF. The r.m.s. value of the current in the circuit is

[4 Marks]

(A) 20mA

(B) 200mA

(C) 10mA

(D) 100mA

Question 28.

An ac voltage is applied to a resistance R and an inductor L in series. If R and the inductive reactance are both equal to 3Ω, the phase difference between the applied voltage and the current in the circuit is

[4 Marks]

(A) zero

(B) π/4

(C) π/2

(D) π/6

Question 29.

The electric and the magnetic field associated with an E.M. wave, propagating along the +z-axis, can be represented by

[4 Marks]

(A) [□□ = E_0 ĵ, □□ = B_0 î]

(B) [□□ = E_0 □□, □□ = B_0 î]

(C) [□□ = E_0 î, □□ = B_0 ĵ]

(D) [□□ = E_0 ĵ, □□ = B_0 k̂]

Question 30.

The decreasing order of wavelength of infrared, microwave, ultraviolet and gamma rays is

[4 Marks]

(A) gamma rays, ultraviolet, infrared, microwaves

(B) infrared, microwave, ultraviolet, gamma rays

(C) microwave, infrared, ultraviolet, gamma rays

(D) microwaves, gamma rays, infrared, ultraviolet

Question 31.

Which of the following is not due to total internal reflection?

[4 Marks]

(A) Mirage on hot summer days

(B) Brilliance of diamond

(C) Difference between apparent and real depth of pond

(D) Working of optical fibre

Question 32.

A biconvex lens has a radius of curvature of magnitude 20 cm. Which one of the following options best describe the image formed of an object of height 2 cm placed 30 cm from the lens?

[4 Marks]

(A) Virtual, upright, height = 1 cm

(B) Real, inverted, height = 4 cm

(C) Virtual, upright, height = 0.5 cm

(D) Real, inverted, height = 1 cm

Question 33.

Electrons used in an electron microscope are accelerated by a voltage of 25 kV. If the voltage is increased to 100kV then the de-Broglie wavelength associated with the electrons would

[4 Marks]

(A) decrease by 2 times

(B) increase by 2 times

(C) decrease by 4 times

(D) increase by 4 times

Question 34.

In the Davisson and Germer experiment, the velocity of electrons emitted from the electron gun can be increased by

[4 Marks]

(A) decreasing the potential difference between the anode and filament

(B) decreasing the filament current

(C) increasing the potential difference between the anode and filament

(D) increasing the filament current

Question 35.

Photoelectric emmision occurs only when the incident light has more than a certain minimum

[4 Marks]

(A) intensity

(B) frequency

(C) wavelength

(D) power

Question 36.

Light of two different frequencies whose photons have energies 1 eV and 2.5 eV respectively illuminate a metallic surface whose work function is 0.5 eV successively. Ratio of maximum speeds of

emitted electrons will be

[4 Marks]

(A) 1:2

(B) 1:4

(C) 1:1

(D) 1:5

Question 37.

In photoelectric emission process from a metal of work function 1.8 eV, the kinetic energy of most energetic electrons is 0.5 eV. The corresponding stopping potential is

[4 Marks]

(A) 1.2V

(B) 0.5V

(C) 1.8V

(D) 2.3V

Question 38.

The wavelength of the first line of Lyman series for hydrogen atom is equal to that of the second line of Balmer series for a hydrogen like ion. The atomic number Z of hydrogen like ion is

[4 Marks]

(A) 3

(B) 1

(C) 4

(D) 2

Question 39.

The power obtained in a reactor using U^{235} disintegration is 1000 kW. The mass decay of U^{235} per hour is

[4 Marks]

(A) 10 microgram

(B) 20 microgram

(C) 1 microgram

(D) 40 microgram

Question 40.

A nucleus of mass M emits a photon of frequency v and the nucleus recoils. The recoil energy will be

[4 Marks]

(A) Mc^2 - hv

(B) h^2v^2 / $2Mc^2$

(C) zero

(D) hv

Question 41.

Fusion reaction takes place at high temperature because

[4 Marks]

(A) nuclei break up at high temperature

(B) kinetic energy is high enough to overcome the coulomb repulsion between nuclei

(C) atoms get ionised at high temperature

(D) molecules break up at high temperature

Question 42.

The half life of a radioactive isotope 'X' is 50 years. It decays to another element 'Y' which is stable. The two elements 'X' and 'Y' were found to be in the ratio of 1: 15 in a sample of a given rock. The age of the rock was estimated to be

[4 Marks]

(A) 150 years

(B) 200 years

(C) 250years

(D) 100 years

Question 43.

A nucleus ${}^{m}_{n}X$ emits one α-particle and two β-particles. The resulting nucleus is

[4 Marks]

(A) ${}^{m-4}_{n-2}Y$

(B) ${}^{m-4}_{n}X$

(C) ${}^{m-6}_{n}Z$

(D) ${}^{m-6}_{n-4}Z$

Question 44.

In forward biasing of the p-n junction

[4 Marks]

(A) the positive terminal of the battery is connected to p-side and the depletion region becomes thin

(B) the positive terminal of the battery is connected to p-side and the depletion region becomes thick

(C) the positive terminal of the battery is connected to n-side and the depletion region becomes thick

(D) the positive terminal of the battery is connected to n-side and the depletion region becomes thin

Question 45.

If a small amount of antimony is added to germanium crysts

[4 Marks]

(A) the antimony becomes an acceptor atom

(B) It becomes a p-type semiconductor

(C) there will be more free electrons than holes in the semiconductor

(D) its resistance is increased

Question 46.

A transistor is operated in common emitter configuration at V_c = 2V such that a change in the base current from 100 μA to 300 μA produces a change in the collector current from 10 mA to 20 mA. The current gain is

[4 Marks]

(A) 25

(B) 50

(C) 100

(D) 75

Question 47.

A parallel plate capacitor has a uniform electric field E in the space between the plates. If the distance between the plates is d and area of each plate is A, the energy stored in the capacitor is:

[4 Marks]

(A) $1/2\ \varepsilon_0 E^2$

(B) $E^2 A d / \varepsilon_0$

(C) $1/2\ \varepsilon_0 E^2 A d$

(D) $\varepsilon_0 E A d$

Question 48.

The energies E_1 and E_2 of two radiations are 25 eV and 50 eV, respectively. The relation between their wavelengths i.e., λ_1 and λ_2 will be:

[4 Marks]

(A) $\lambda_1 = 1/2\ \lambda_2$

(B) $\lambda_1 = 4\lambda_2$

(C) $\lambda_1 = 2\lambda_2$

(D) $\lambda_1 = \lambda_2$

Question 49.

If n = 6, the correct sequence for filling of electrons will be:

[4 Marks]

(A) ns → np → (n-1)d → (n-2)f

(B) ns → (n-1)d → (n-2)f → np

(C) ns → (n-2)f → (n-1)d → np

(D) ns → (n-2)f → np → (n-1)d

Question 50.

The total number of atomic orbitals in fourth energy level of an atom is:

[4 Marks]

(A) 4

(B) 32

(C) 8

(D) 16

Question 51.

Which of the two ions from the list given below that have the geometry that is explained by the same hybridization of orbitals, NO_2^-, NO_3^-, NH_2^-, NH_4^+, SCN^-?

[4 Marks]

(A) NO_2^- and NO_3^-

(B) NH_4^+ and NO_3^-

(C) SCN^- and NH_2^-

(D) NO_2^- and NH_2^-

Question 52.

Considering the state of hybridization of carbon atoms, find out the molecule among the following which is linear?

[4 Marks]

(A) CH_3-CH_2-CH_2-CH_3

(B) CH_2=CH-CH_2-C≡CH

(C) CH_3-C≡C-CH_3

(D) CH_3-CH=CH-CH_3

Question 53.

Which of the following has the minimum bond length?

[4 Marks]

(A) O_2^-

(B) O_2^+

(C) O_2^{2-}

(D) O_2

Question 54.

Two gases A and B having the same volume diffuse through a porous partition in 20 and 10 seconds respectively. The molecular mass of A is 49 u. Molecular mass of B will be:

[4 Marks]

(A) 50.00 u

(B) 12.25 u

(C) 25.00 u

(D) 6.50 u

Question 55.

By what factor does the average velocity of a gaseous molecule increase when the temperature (in Kelvin) is doubled?

[4 Marks]

(A) 2.8

(B) 2.0

(C) 4.0

(D) 1.4

Question 56.

A gaseous mixture was prepared by taking equal mole of CO and N_2. If the total pressure of the mixture was found 1 atmosphere, the partial pressure of the nitrogen (N_2) in the mixture is:

[4 Marks]

(A) 0.5 atm

(B) 0.8 atm

(C) 1 atm

(D) 0.9 atm

Question 57.

Which of the following is correct option for free expansion of an ideal gas under adiabatic condition?

[4 Marks]

(A) $q = 0, \Delta T = 0, w = 0$

(B) $q = 0, \Delta T < 0, w \neq 0$

(C) $q = 0, \Delta T \neq 0, w = 0$

(D) $q \neq 0, \Delta T = 0, w = 0$

Question 58.

Enthalpy change for the reaction, $4H(g) \rightarrow 2H_2(g)$ is -869.6 kJ. The dissociation energy of H-H bond is:

[4 Marks]

(A) +217.4 kJ

(B) +434.8 kJ

(C) -434.8 kJ

(D) -869.6 kJ

Question 59.

If the enthalpy change for the transition of liquid water to steam is 30 kJ mol^{-1} at 27°C, the entropy change for the process would be:

[4 Marks]

(A) 0.1 J $mol^{-1}K^{-1}$

(B) 100 J $mol^{-1}K^{-1}$

(C) 1.0 J $mol^{-1}K^{-1}$

(D) 10 J $mol^{-1}K^{-1}$

Question 60.

For the reaction $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$, the equilibrium constant is K_1. The equilibrium constant is K_2 for the reaction $2NO(g) + O_2(g) \rightleftharpoons 2NO_2(g)$. What is K for the reaction $NO_2(g) \rightleftharpoons 1/2\ N_2(g) + O_2(g)$?

[4 Marks]

(A) $1 / (4K_1K_2)$

(B) $1 / (2K_1K_2)$

(C) $[1 / (K_1K_2)]^{1/2}$

(D) $1 / (K_1K_2)$

Question 61.

Which of the following is least likely to behave as Lewis base?

[4 Marks]

(A) OH

(B) BF_3

(C) NH_3

(D) H_2O

Question 62.

A buffer solution is prepared in which the concentration of NH_3 is 0.30 M and the concentration of NH_4^+ is 0.20 M. If the equilibrium constant, K_b for NH_3 equals 1.8×10^{-5}, what is the pH of this solution? (log 2.7 = 0.433).

[4 Marks]

(A) 9.43

(B) 9.08

(C) 11.72

(D) 8.73

Question 63.

Which one of the following is present as an active ingredient in bleaching powder for bleaching action?

[4 Marks]

(A) CaO_2Cl

(B) $CaCl_2$

(C) $Ca(OCl)_2$

(D) $CaOCl_2$

Question 64.

Name the type of the structure of silicate in which one oxygen atom of $[SiO_4]^{4-}$ is shared?

[4 Marks]

(A) Linear chain silicate

(B) Sheet silicate

(C) Three dimensional

(D) Pyrosilicate

Question 65.

In Duma's method of estimation of nitrogen 0.35 g of an organic compound gave 55 mL of nitrogen collected at 300 K temperature and 715 mm pressure. The percentage composition of nitrogen in the compound would be: (Aqueous tension at 300 K = 15 mm)

[4 Marks]

(A) 17.45

(B) 14.45

(C) 15.45

(D) 16.45

Question 66.

The Lassaigne's extract is boiled with conc. HNO_3 while testing for halogens. By doing so it:

[4 Marks]

(A) increases the concentration of NO_3^- ions.

(B) increases the solubility product of AgCl.

(C) decomposes Na_2S and NaCN, if formed.

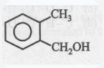
(D) helps in the precipitation of AgCl.

Question 67.

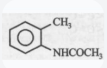
Which one of the following is most reactive towards electrophilic reagent?

[4 Marks]

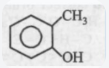
(A)



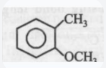
(B)



(C)



(D)



Question 68.

Which one of the following statement is not true?

[4 Marks]

(A) Clean water would have a BOD value of less than 5 ppm.

(B) Oxides of sulphur, nitrogen and carbon are the most widespread air pollutant.

(C) Concentration of DO below 6 ppm is good for the growth of fish.

(D) pH of drinking water should be between 5.5-9.5.

Question 69.

The freezing point depression constant for water is -1.86 °C m^{-1}. If 5.00 g Na_2SO_4 is dissolved in 45.0 g H_2O, the freezing point is changed by -3.82 °C. Calculate the van't Hoff factor for Na_2SO_4.

[4 Marks]

(A) 0.381

(B) 2.05

(C) 2.63

(D) 3.11

Question 70.

The van't Hoff factor i for a compound which undergoes dissociation in one solvent and association in other solvent is respectively:

[4 Marks]

(A) greater than one and less than one.

(B) greater than one and greater than one.

(C) less than one and less than one.

(D) less than one and greater than one.

Question 71.

Standard electrode potential of three metals X, Y and Z are -1.2 V, +0.5 V and -3.0 V, respectively. The reducing power of these metals will be:

[4 Marks]

(A) Z > X > Y

(B) X > Z > Y

(C) Y > Z > X

(D) X > Y > Z

Question 72.

The electrode potentials for

$Cu^{2+}(aq) + e^- \rightarrow Cu^+(aq)$

and $Cu^+(aq) + e^- \rightarrow Cu(s)$

are +0.15 V and +0.50 V, respectively. The value of E° _Cu^{2+}/Cu will be:

[4 Marks]

(A) 0.325 V

(B) 0.500 V

(C) 0.150 V

(D) 0.650 V

Question 73.

Standard electrode potential for Sn^{4+}/Sn^{2+} couple is +0.15 V and that for the Cr^{3+}/Cr couple is -0.74 V. These two couples in their standard state are connected to make a cell. The cell potential will be:

[4 Marks]

(A) +1.83 V

(B) +0.18 V

(C) +1.19 V

(D) +0.89 V

Question 74.

If the E°_cell for a given reaction has a negative value, then which of the following gives the correct relationships for the values of ΔG° and K_eq?

[4 Marks]

(A) $\Delta G^\circ > 0$; K_eq < 1

(B) $\Delta G^\circ < 0$; K_eq < 1

(C) $\Delta G^\circ < 0$; K_eq > 1

(D) $\Delta G^\circ > 0$; K_eq > 1

Question 75.

Which one of the following statements for the order of a reaction is incorrect?

[4 Marks]

(A) Order of reaction is always whole number.

(B) Order can be determined only experimentally.

(C) Order is not influenced by stoichiometric coefficient of the reactants.

(D) Order of reaction is sum of power to the concentration terms of reactants to express the rate of reaction.

Question 76.

If x is amount of adsorbate and m is amount of adsorbent, which of the following relations is not related to adsorption process?

[4 Marks]

(A) $x/m = p \times T$

(B) $x/m = f(T)$ at constant p.

(C) $x/m = f(p)$ at constant T.

(D) $p = f(T)$ at constant (x/m).

Question 77.

Which of the following elements is present as the impurity to the maximum extent in the pig iron?

[4 Marks]

(A) Phosphorus

(B) Carbon

(C) Silicon

(D) Manganese

Question 78.

Which of the following pairs of metals is purified by van Arkel method?

[4 Marks]

(A) Ni and Fe

(B) Zr and Ti

(C) Ga and In

(D) Ag and Au

Question 79.

For the four successive transition elements (Cr, Mn, Fe and Co), the stability of +2 oxidation state will be there in which of the following order?

[4 Marks]

(A) Cr > Mn > Co > Fe

(B) Mn > Fe > Cr > Co

(C) Fe > Mn > Co > Cr

(D) Co > Mn > Fe > Cr

Question 80.

Acidified $K_2Cr_2O_7$ solution turns green when Na_2SO_3 is added to it. This is due to the formation of:

[4 Marks]

(A) $Cr_2(SO_3)_3$

(B) CrO_4^{2-}

(C) $CrSO_4$

(D) $Cr_2(SO_4)_3$

Question 81.

The complexes $[Co(NH_3)_6][Cr(CN)_6]$ and $[Cr(NH_3)_6][Co(CN)_6]$ are the examples of which type of isomerism?

[4 Marks]

(A) Geometrical isomerism

(B) Linkage isomerism

(C) Ionization isomerism

(D) Coordination isomerism

Question 82.

The complex, $[Pt(Py)(NH_3)BrCl]$ will have how many geometrical isomers?

[4 Marks]

(A) 4

(B) 2

(C) 4

(D) 3

Question 83.

Of the following complex ions, which is diamagnetic in nature?

[4 Marks]

(A) $[CoF_6]^{3-}$

(B) $[CuCl_4]^{2-}$

(C) $[Ni(CN)_4]^{2-}$

(D) $[NiCl_4]^{2-}$

Question 84.

The d-electron configurations of Cr^{2+}, Mn^{2+}, Fe^{2+} and Co^{2+} are d^4, d^5, d^6 and d^7 respectively. Which one of the following will exhibit minimum paramagnetic behaviour?

[4 Marks]

(A) $[Cr(H_2O)_6]^{2+}$

(B) $[Co(H_2O)_6]^{2+}$

(C) $[Fe(H_2O)_6]^{2+}$

(D) $[Mn(H_2O)_6]^{2+}$

Question 85.

Clemmensen reduction of a ketone is carried out in the presence of which of the following?

[4 Marks]

(A) H_2 and Pt as catalyst

(B) Glycol with KOH

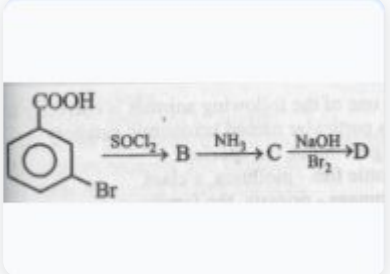
(C) $LiAlH_4$

(D) Zn-Hg with HCl

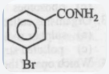
Question 86.

In a set of reactions m-bromobenzoic acid gave a product D. Identify the product D.

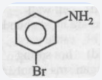
[4 Marks]



(A)



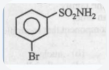
(B)



(C)



(D)

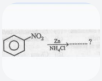


Question 87.

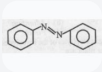
What is the product obtained in the following reaction:

[4 Marks]

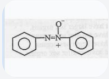
(A)



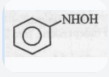
(B)



(C)



(D)



Question 88.

Which one of the following statements is not true regarding (+) Lactose?

[4 Marks]

(A) (+) Lactose, $C_{12}H_{22}O_{11}$, contains 8 -OH groups.

(B) (+) Lactose is a reducing sugar and does not exhibit mutarotation.

(C) (+) Lactose is a β-glycoside formed by the union of a molecule of D(+) glucose and a molecule of D(+) galactose.

(D) On hydrolysis (+) Lactose gives equal amount of D(+) glucose and D(+) galactose.

Question 89.

Of the following which one is classified as polyester polymer?

[4 Marks]

(A) Nylon-66

(B) Melamine

(C) Bakelite

(D) Terylene

Question 90.

Which one of the following is employed as Antihistamine?

[4 Marks]

(A) Diphenyl hydramine

(B) Chloramphenicol

(C) Norethindrone

(D) Omeprazole

Question 91.

The half life of a substance in a certain enzyme-catalysed reaction is 138 s. The time required for the concentration of the substance to fall from 1.28 mg L^{-1} to 0.04 mg L^{-1} is:

[4 Marks]

(A) 552 s

(B) 414 s

(C) 276 s

(D) 690 s

Question 92.

Mole fraction of the solute in a 1.00 molal aqueous solution is:

[4 Marks]

(A) 0.1770

(B) 1.7700

(C) 0.0177

(D) 0.0344

Question 93.

Which one of the following animals is correctly matched with its particular named taxonomic category ?

[4 Marks]

(A) Tiger - tigris, the species

(B) Cuttle fish - mollusca, a class

(C) Housefly - musca, an order

(D) Humans - primata, the family

Question 94.

In eubacteria, a cellular component that resembles eukaryotic cells is:

[4 Marks]

(A) plasma membrane

(B) nucleus

(C) cell wall

(D) ribosomes

Question 95.

Organisms called methanogens are most abundant in a

[4 Marks]

(A) ‘sulphur rock

(B) cattle yard

(C) hot spring

(D) polluted stream

Question 96.

Which one of the following organisms is not an example of eukaryotic cells ?

[4 Marks]

(A) Escherichia coli

(B) Paramecium caudatum

(C) Euglena viridis

(D) Amoeba proteus

Question 97.

Archegoniophore is present in :

[4 Marks]

(A) Funaria

(B) Adiantum

(C) Chara

(D) Marchantia

Question 98.

The gametophyte is not an independent, free living generation in :

[4 Marks]

(A) Adiantum

(B) Polytrichum

(C) archantia

(D) Pinus

Question 99.

Compared with the gametophytes of the bryophytes the game□tophytes of vascular plant are

[4 Marks]

(A) smaller and have smaller sex organs.

(B) larger and have larger sex organs.

(C) smaller but have larger sex organs.

(D) larger but have smaller sex organs.

Question 100.

Which one of the following have the highest number of species in nature?

[4 Marks]

(A) Birds

(B) Angiosperms

(C) Insects

(D) Fungi

Question 101.

What will you look for to identify the sex of the following

[4 Marks]

(A) Male shark-Claspers borne on pelvic fins

(B) Female cockroach-Anal cerci

(C) Male frog-A copulatory pad on the firstdigit of the hind imb

(D) Female Ascaris- Sharply curved posterior end

Question 102.

Which one of the following groups of animals is correctly

matched with its one characteristic feature without even a

single exception?

[4 Marks]

(A) Mammalia : give birth to young one.

(B) Chondrichthyes : possess cartilagious endoskeleton

(C) Chordata': possess 2 mouth provided with an upper I and lower jaw

(D) Reptilia : possess 3 - chambered heart with one incompletely divided ventricle

Question 103.

In which one of the folllowing, the genus name, its two characters and its class/phylum are correctly matched?

[4 Marks]

(A)

(d)	*Aurelia*	(i)	Cnidoblasts	Coelen-terata
		(ii)	Organ level of organization	

(B)

(c)	*Ptero-pus*	(i)	Skin possesses hair	Mammalia
		(ii)	Oviparous	

(C)

(b)	Sala-mandra	(i)	A tympanum rep-resents ear	Amphibia
		(ii)	Fertilization is external	

(D)

	Genus name		Two characters	Class/ phylum
(a)	*Ascaris*	(i)	Body segmented	Annelida
		(ii)	Males and females distinct	

Question 104.

Flowers are zygomorphic 1n

[4 Marks]

(A) datura

(B) tomato

(C) mustard

(D) gulmohur

Question 105.

'Which one of the following statements is correct?

[4 Marks]

(A) In tomato, fruit is a capsule

(B) Seeds of orchids have oil-rich endosperm

(C) Flower of tulip is a modified shoot

(D) Placentation in primose is basal

Question 106.

'What would be the number of chromosomes of the aleurone cells of a plant with 42 chromosomes in its root tip cells?

[4 Marks]

(A) 21

(B) 63

(C) 84

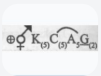
(D) 42

Question 107.

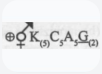
The correct floral formula of chilli is;

[4 Marks]

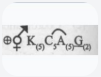
(A)



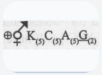
(B)



(C)



(D)



Question 108.

The ovary is half inferior in flowers of

[4 Marks]

(A) peach

(B) guava

(C) cucumber

(D) cotton

Question 109.

Ground tissue includes

[4 Marks]

(A) all tissues internal to endodermis

(B) epidermis and cortex

(C) all tissues except epidermis and vascular bundles

(D) all tissues external to endodermis

Question 110.

In land plants, the guard cells differ from other epidrmal cells in having :

[4 Marks]

(A) endoplasmic reticulum

(B) chloroplasts

(C) mitochondria

(D) cytoskeleton

Question 111.

'Which one of the following is wrongly matched?

[4 Marks]

(A) Root - Exarch protoxylem

(B) Root pressure - Guttation

(C) Cassia - Imbricate aestivation 9

(D) Puccinia - Smut

Question 112.

The cork cambium, cork and secondary cortex are collectively called:

[4 Marks]

(A) phellem

(B) periderm

(C) phelloderm

(D) phellogen

Question 113.

The ciliated columnar epithelial cells in humans are known to occur in :

[4 Marks]

(A) eustachian tube and stomach lining

(B) bile duct and oesophagus

(C) bronchioles and fallopian tubes

(D) fallopian tubes and urethra

Question 114.

Which of the following is correctly stated as it happens It the common cockroach ?

[4 Marks]

(A) Malpighian tubules are excretory organs projecting out from the colon

(B) Oxygen is transported by haemoglobin in blood

(C) Nitrogenous excretory product is urea

(D) The food is ground by mandibles and gizzard

Question 115.

One very special feature in the earthworm Pheretima is that.

[4 Marks]

(A) fertilisation for eggs occurs inside the body

(B) the typhlosole greatly increases the effective absorption area of the digested food in the intestine

(C) the S-shaped setae embedded in the integument are the defensive weapons used against the enemies

(D) it has a long dorsal tubular heart

Question 116.

. Important site for formation of glycoproteins and glycolipids is

[4 Marks]

(A) vacuole

(B) golgi apparatus

(C) plastid

(D) lysosome

Question 117.

Peptide synthesis inside a cell takes place in:

[4 Marks]

(A) ‘mitochondria

(B) chloroplast

(C) chromoplast

(D) ribosomes

Question 118.

What are those structures that appear as beads - on- string in he chromosomes when viewed under electron microscope?

[4 Marks]

(A) Base pairs

(B) Nucleosomes

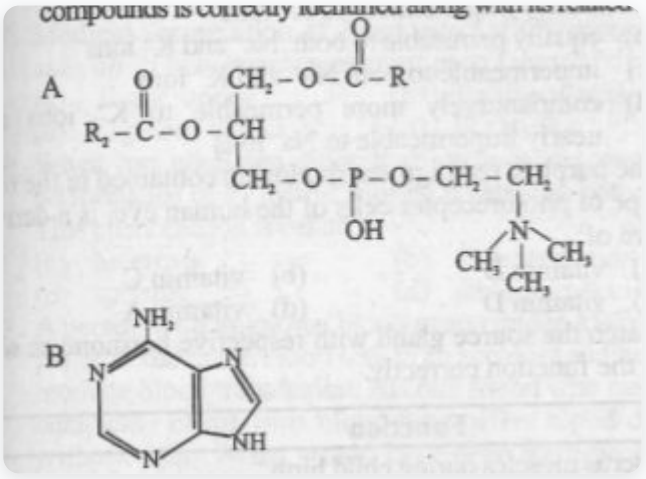
(C) Nucleotides

(D) Genes

Question 119.

Which one of the following structural formulae of two organic compounds is correctly identified along with its related finction?

[4 Marks]



(A) A: Lecithin— a component of cell membrane

(B) B: Uracil —a component of DNA

(C) A: Triglyceride — major source of energy

(D) B :Adenine — a nucleotide that makes up nucleic acids

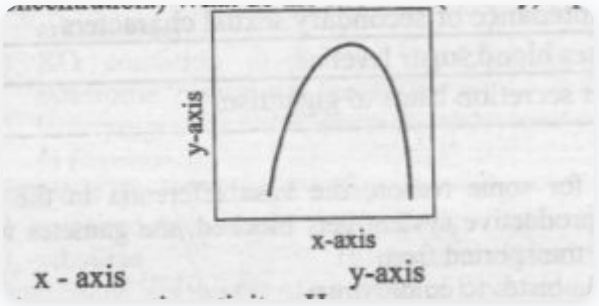
Question 120.

The curve given below shows enzymatic activity with

relation to three conditions (pH, temperature and substrate

concentration.) What do the two axes (x and y) represent ?

[4 Marks]



(A) enzymatic activity temperature

(B) substrate concentration enzymatic activity

(C) enzymatic activity pH

(D) temperature enzyme activit

Question 121.

Select the correct option with respect to mitosis.

[4 Marks]

(A) Chromatids separate but remain in the centre of the cellin anaphase.

(B) Chromatids sart moving fowards opposite poles inelophase

(C) Golgi complex and endoplasmic reticulum are still visible at the end of prophase.

(D) Chromosomes move to the spindle equator and getaligned along equatorial plate in metaphase

Question 122.

Which one of the following elements in plants is not re- ‘mobilised?

[4 Marks]

(A) Sulphur

(B) Potassium

(C) Calcium

(D) Phosphorus

Question 123.

A prokaryotic autotrophic nitrogen fixing symboint is found in

[4 Marks]

(A) Pisum

(B) Cicer

(C) Cycas

(D) Alnus

Question 124.

Nitrifying bacteria :

[4 Marks]

(A) convert free nitrogen to nitrogen compounds

(B) oxidize ammoenia to nitrates

(C) convert proteins into ammonia

(D) reduce nitrates to free nitrogen

Question 125.

The function of leg haemoglobin in the root nodules of legumes is :

[4 Marks]

(A) oxygen removal

(B) nodule differentiation

(C) expression of nif gene

(D) inhibition of nitrogenase activity

Question 126.

CAM helps the plants in

[4 Marks]

(A) conserving water

(B) secondary growth

(C) disease resistance

(D) reproduction

Question 127.

Two friends are eating together on a dining table. One of them suddenly starts coughing while swallowing some food. This coughing would have been due to improper ‘movement

[4 Marks]

(A) diaphragm

(B) neck

(C) epiglottis

(D) tongue

Question 128.

Which one of the following enzymes carries out the initial step in the digestion of milk in humans?

[4 Marks]

(A) Pepsin

(B) Remnin

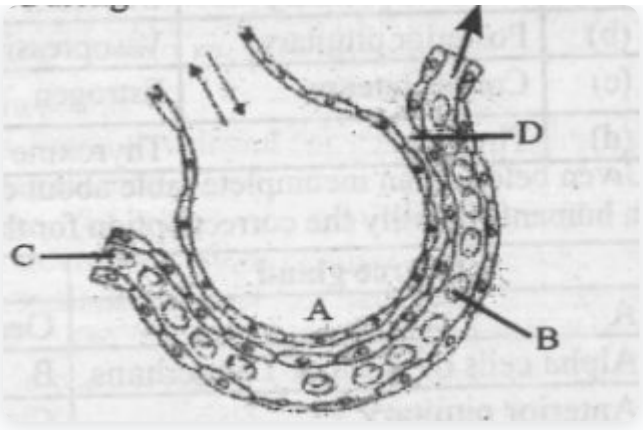
(C) Lipase

(D) Trypsin

Question 129.

The figure given below shows a small part of human lung where exchange of gases takes place. In which one of the options given below, the one part A, B, C or D is correctly identified along with its function?

[4 Marks]



(A) O_2 and CO_2 B: red blood cell CO_2 mainly -transport of

(B) D: capillary wall - exchange of O_2 and CO_2 takes place here.

(C) A: alveolar cavity - main site of exchange of respiratory gases

(D) C: arterial capillary - passes oxygen to tissues

Question 130.

A large proportion of oxygen is left unused in the human blood even after its uptake by the body tissues. This O_2

[4 Marks]

(A) helps in releasing more O_2 to the epithelial tissues.

(B) raise the pCO_2 of blood to 75 mm of Hg.

(C) is enough to keep oxyhaemoglobin saturation at 96%

(D) acts as a reserve during muscular exercise

Question 131.

Which one of the following plasma proteins is involved in the coagulation of blood?

[4 Marks]

(A) an albumin

(B) serum amylase

(C) fibrinogen

(D) serum amylase

Question 132.

'Bundle of His' is a part of which one of the following organs in humans?

[4 Marks]

(A) Brain

(B) Heart

(C) Pancreas

(D) Kidney

Question 133.

Arteries are best defined as'the vessels which :

[4 Marks]

(A) supply oxygenated blood to the different organs

(B) break up into capillaries which reunite to form one visceral organ.

(C) break up into capillaries which reunite to form a vein.

(D) carry blood from one visceral organ to another visceral organ.

Question 134.

‘Which one of the following statements is correct regarding blood pressure ?

[4 Marks]

(A) 130/90 mmHg is considered high and requires treatment.

(B) 100/55 mmHg is considered an ideal blood pressure.

(C) 190/110 mmHg may harm vital organs like brain and kidney.

(D) 105/50 mm Hg makes one very active

Question 135.

Uricotelic mode of passing out nitrogenous wastes is found in

[4 Marks]

(A) Reptiles and Bird

(B) Birds and Annelids

(C) Amphibians and Reptiles

(D) Insects and Amphibians

Question 136.

Which one of the following is not a part of a renal pelvis?

[4 Marks]

(A) Peritubular capillaries

(B) Convoluted tubules

(C) Collecting ducts

(D) Loops of Henle

Question 137.

Which one of following correctly explain function of a specific part of a human nephron ?

[4 Marks]

(A) Podocytes : create minute spaces (slite pores) for the filtration of blood into the Bowman's capsule

(B) Henle's loop : most reabsorption of the major substancesfrom the glomerular filtrat

(C) Afferent arteriole :carries the blood away from the glomerular towards renal vein.

(D) Distal convoluted tubule: reabsorption of K^+ ions into the surrounding blood capillaries

Question 138.

Which one of the following statement is correct with regard to kidney function regulation?

[4 Marks]

(A) When someone drinks lot of water, ADH release is suppressed.

(B) Exposure to cold temperature blood flow stimulates formation of Angiotensin II.

(C) During summer when body loses lot of water by evaporation, the release of ADH is suppressed.

(D) An increase in glomerular blood flow stimulates formation of Angiotensin II.

Question 139.

When a neuron is in resting state i.e., not conducting any impulse, the axonal membrane is:

[4 Marks]

(A) impermeable to both Na^+ and K^+ ions.

(B) comparatively more permeable to K^+ ions and nearly impermeable to Na^+ ions.

(C) comparatively more permeable to Na^+ ions and nearly impermeable to K^+ ions.

(D) equally permeable to both Na^+ and K^+ ions.

Question 140.

The purplish red pigment rhodopsin contained in the rods type of photoreceptor cells of the human eye, is a derivative of:

[4 Marks]

(A) vitamin B_1

(B) vitamin C

(C) vitamin D

(D) vitamin A

Question 141.

Match the source gland with respective hormone as well as the function correctly.

[4 Marks]

(A)

(d)	Thyroid	Thyroxine	Regulates blood calcium level

(B)

(c)	Corpus luteum	Estrogen	Supports pregnancy

(C)

(a)	Anterior pituitary	Oxytocin	Contraction of uterus muscles during child birth

(D)

(b)	Posterior pituitary	Vasopressin	Stimulates reabsorption of water in the distal tubules in the nephron

Question 142.

Given below is an incomplete table about certain hormones, their source glands and one major effect of each on the body in humans. Identify the correct option for the three blanks, A, B and C.

[4 Marks]

Source gland	Hormone	Function
A	Oestrogen	Maintenance of secondary sexual characters
Alpha cells of islets of Langerhans	B	Raises blood sugar level
Anterior pituitary	C	Over secretion leads to gigantism

(A) A-Ovary; B-Insulin; C-Calcitonin

(B) A-Placenta; B-Glucagon; C-Calcitonin

(C) A-Placenta; B-Insulin; C-Vasopressin

(D) A-Ovary; B-Glucagon; C-Growth hormone

Question 143.

The “Eyes” of the potato tuber are

[4 Marks]

(A) flower buds

(B) root buds

(C) axillary buds

(D) shootbuds

Question 144.

Filiform apparatus is a characteristic feature of

[4 Marks]

(A) suspensor

(B) synergid

(C) zygote

(D) egg

Question 145.

In which one of the following pollination is autogamous?

[4 Marks]

(A) Geitonogamy

(B) Xenogamy

(C) Cleistogamy

(D) Chasmogamy

Question 146.

Wind pollination is common in

[4 Marks]

(A) legumes

(B) orchids

(C) grasses

(D) lilies

Question 147.

A drupe develops in

[4 Marks]

(A) mango

(B) wheat

(C) pea

(D) tomato

Question 148.

Nucellar polyembryony is reported in species of

[4 Marks]

(A) Triticum

(B) Brassica

(C) Citrus

(D) Gossypium

Question 149.

If for some reason, the vasa efferentia in the human reproductive system gets blocked, the gametes will not be transported from

[4 Marks]

(A) vagina to uterus

(B) ovary to uterus

(C) testes to epididymis

(D) eididymis to vas deferens

Question 150.

The testes in humans are situated outside the abdominal cavity insides pouch called scrotum. The purpose served is for

[4 Marks]

(A) maintaining the scrotal temperature lower than the internal body temperature

(B) escaping any possible compression by the visceral organs

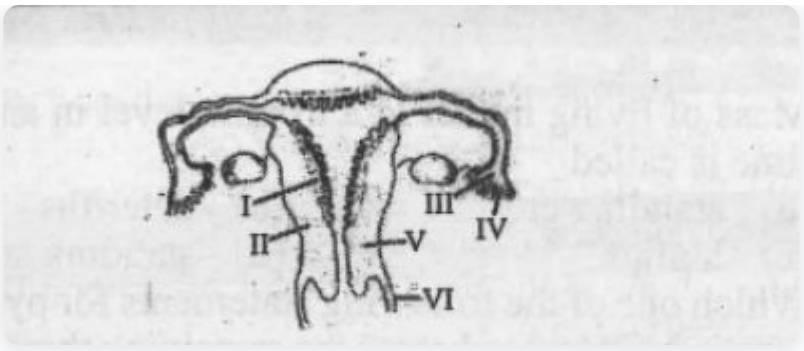
(C) providing more space for the growth of epididymis

(D) providing a secondary sexual feature for exhibiting the male sex

Question 151.

The figure given below depicts a diagrammatic sectional view of the female reproductive system of humans. Which one set of three parts out of I-VI have been correctly identified?

[4 Marks]



(A) (I) Perimetrium, (II) Myometrium, (III) Fallopian tube

(B) (II) Endometrium, (III) Infundibulum, (IV) Fimbriae

(C) (III) Infundibulum, (IV) Fimbriae, (V) Cervix

(D) (IV) Oviducal funnel, (V) Uterus, (VI) Cervix

Question 152.

Which one of the following is the most widely accepted method of ion in India, as at present ?

[4 Marks]

(A) Cervical caps

(B) IUDs. (Intra uterine devices)

(C) Tubectomy

(D) Diaphragms

Question 153.

Medical Termination of Pregnancy (MTP) is considered safe up to how many weeks of pregnancy?

[4 Marks]

(A) Twelve weeks

(B) Eight weeks

(C) Eighteen weeks

(D) Six weeks

Question 154.

When two unrelated individuals or lines are crossed, the performance of F_1 hybrid is often superior to both parents. This phenomenon is called:

[4 Marks]

(A) heterosis

(B) transformation

(C) metamorphosis

(D) splicing

Question 155.

A person with unknown blood group under ABO system, has suffered much blood loss in an accident and needs im- mediate blood transfusion. His one friend who has a valid certificate of his own blood type offers blood donation without delay. What would have been the type of blood group of the donor friend?

[4 Marks]

(A) TypeB

(B) Type AB

(C) TypeO

(D) TypeA

Question 156.

Which one of the following conditions correctly describes the manner of determining the sex in the given example?

[4 Marks]

(A) Homozygous sex chromosomes (ZZ) determine female sex in birds.

(B) XO type of sex chromosomes determine male sex in grasshopper

(C) XO condition in human' as found in Turner syndrome, determines female sex.

(D) Homozygous sex chromosomes (XX) produce male in Drosophila.

Question 157.

Mutations can be induced with :

[4 Marks]

(A) I AA

(B) ethylene

(C) gamma radiations

(D) infra red radiations

Question 158.

Given below is a sample of a portion of DNA strand. What is so special shown in it?

5' ----------GAATTC----------3'

'3---------- CTTAAG ---------- 5'

[4 Marks]

(A) Palindromic sequence-of base pairs

(B) Deletion mutation

(C) Replication completed

(D) Start codon at the 5' end

Question 159.

Which one of the following also acts as a catalyst in a bacterial cell ?

[4 Marks]

(A) 5s rRNA

(B) sn RNA

(C) hn RNA

(D) 23s rRNA

Question 160.

What was the most significant trend in evolution of modermn ‘man (Homo sapiens) from his ancestors?

[4 Marks]

(A) Upright posture

(B) Shortening of jaws

(C) Increasing brain capacity

(D) Binocular vision

Question 161.

Where will you look for the sporozoites of the malarial parasite?

[4 Marks]

(A) saliva of infected female Anopheles mosquito

(B) Red blood corpuscles of humans suffering from malaria

(C) Salivary glands of freshly moulted female Anopheles mosquito

(D) Spleen of infected humans

Question 162.

‘Which one of the following is categorised as a parasite in true sense ?

[4 Marks]

(A) Human foetus developing inside the uterus draws nourishment from the mother

(B) The female Anopheles bites and sucks blood from human

(C) The cuckoo (koel) lays its eggs in crow’s nest.

(D) Head louse living on the human scalp as well as laying eggs on human hair

Question 163.

‘Which one of the following acts as a physiological barrier to the entry of isms in human body?

[4 Marks]

(A) Tears

(B) Monocytes

(C) Skin

(D) Epithelium of urogenital tract

Question 164.

At which stage of HIV infection does one usually show symptoms of AIDS?

[4 Marks]

(A) When the infecting retrovirus enters host cell

(B) When viral DNA is produced by reverse trancriptase

(C) Within 15 day of sexual contact with an infected person.

(D) When HIV replicates rapidly in helper T- lymphocytes and damages large number of these

Question 165.

A certain patient is suspected to be suffering from Ac□quired Immuno Deficiency Syndrome. Which diagnostic technique will you recommend for its detection?

[4 Marks]

(A) MRI

(B) ELISA

(C) Ultra sound

(D) WIDAL

Question 166.

Jaya and Ratna developed for green revolution in India are the varieties of

[4 Marks]

(A) maize

(B) rice

(C) wheat

(D) bajra

Question 167.

Himgiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of

[4 Marks]

(A) chilli

(B) maize

(C) sugarcane

(D) wheat

Question 168.

Ethanol is commercially produced through a particular species of :

[4 Marks]

(A) Saccharomyces

(B) Clostridium

(C) Aspergillus

(D) Trichoderma

Question 169.

Which one of the following help in absorption of phosphorus from soil by plants?

[4 Marks]

(A) Glomus

(B) Rhizobium

(C) Frankia

(D) Anabaena

Question 170.

Which one of the following is not a biofertilizer?

[4 Marks]

(A) Agrobacterium

(B) Rhizobium

(C) Nostoc

(D) Mycorrhiza

Question 171.

There is a restriction endonuclease called EcoRI. What does "co" part in it stand for?

[4 Marks]

(A) colon

(B) coelom

(C) coenzyme

(D) coli

Question 172.

A garose extracted from sea weeds finds use in:

[4 Marks]

(A) Spectrophotometry

(B) Tissue culture

(C) PCR

(D) Gel electrophoresis

Question 173.

The most common substrate used in distilleries for the production of ethanol is

[4 Marks]

(A) corn meal

(B) soya meal

(C) molasses

(D) ground gram

Question 174.

The process of RNA interference has been used in the development of plants resistant to

[4 Marks]

(A) nematodes

(B) viruses

(C) fungi

(D) insects

Question 175.

Continuous addition of sugars in ‘fed batch’ fermentation is done to:

[4 Marks]

(A) produce methane

(B) obtain antibiotics

(C) purify enzymes

(D) degrade sewage

Question 176.

Maximum number of existing transgenic animals is of

[4 Marks]

(A) fish

(B) mice

(C) cow

(D) pig

Question 177.

Large woody vines are more commonly found in:

[4 Marks]

(A) tropical rainforests

(B) alpine forests

(C) mangroves

(D) temperate forest

Question 178.

Consider the following four conditions (i) - (iv) and select the correct pair of them as adaptation to environment in desert lizards.

(i) Burrowing in soil to escape high temperature

(ii) Losing heat rapidly from the body during high temperature

(iii) Bask in sun when temperature is low

(iv) Insulating body due to thick fatty dermis

[4 Marks]

(A) (ii), (iv)

(B) (i), (ii)

(C) (i) and (iii)

(D) (iii), (iv)

Question 179.

Which one of the following statements is correct for secondary succession ?

[4 Marks]

(A) It occursona deforested site.

(B) It begins on a bare rock.

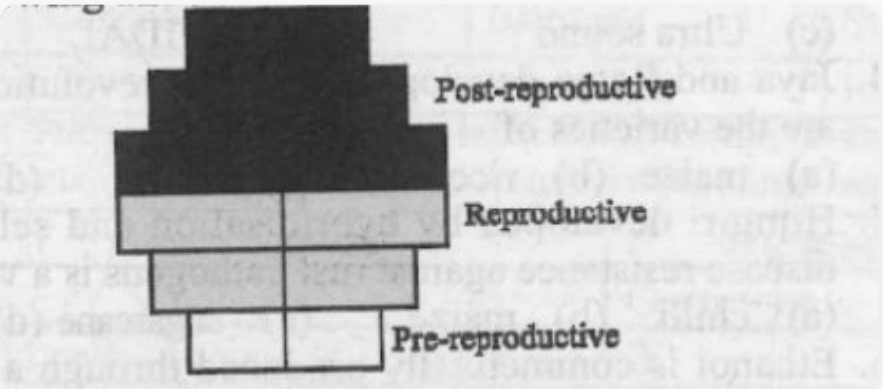
(C) It follows primary succession.

(D) It is similar to primary succession except that it has a relatively fast pace.

Question 180.

What type of human population is represented by the following age pyramid?

[4 Marks]



(A) Expanding population

(B) Declining population

(C) Stable population

(D) Vanishing population

Question 181.

Of the total incident solar radiation the proportion of PAR

[4 Marks]

(A) about 70%

(B) about 60%

(C) less than 50%

(D) more than 80%

Question 182.

Mass of living matter at a trophic level in an area at any time is called

[4 Marks]

(A) standing crop

(B) humus

(C) standing state

(D) deteritus

Question 183.

‘Which one of the following statements for pyramid of energy is incorrect, whereas the remaining three are correct

[4 Marks]

(A) Its base is broad

(B) It shows energy content of different trophic level organisms

(C) It is upright in shape

(D) It is inverted in shape

Question 184.

Which one of the following shows maximum genetic diversity in India?

[4 Marks]

(A) Rice

(B) Groundnut

(C) Maize

(D) Mango

Question 185.

A collection of plants and seeds having diverse alleles of all the genes of a crop is called

[4 Marks]

(A) germplasm

(B) gene library

(C) genome

(D) herbarium

Question 186.

Secondary sewage treatment is mainly a

[4 Marks]

(A) mechanical process

(B) chemical process

(C) biological process

(D) physical process

Question 187.

Which of the following is mainly produced by the activity of anaerobic bacteria on sewage?

[4 Marks]

(A) Propane

(B) Laughing gas

(C) Marsh gas

(D) Mustard

Question 188.

Eutrophication is often seen in

[4 Marks]

(A) deserts

(B) fresh water lakes

(C) ocean

(D) mountains

Question 189.

Which one of the following statements is wrong in case of Bhopal tragedy?

[4 Marks]

(A) Thousands of human beings died

(B) Methyl Isocyanate gas leakage took place

(C) Radioactive fall out engulfed Bhopal

(D) It took place in the night of December 2/3 1984.

Question 190.

Which one of the following expanded forms of the following acronyms is correct?

[4 Marks]

(A) EPA=Environmental Pollution Agency

(B) IPCC =Intemational Panel for Climate Change

(C) IUCN = International Union for Conservation of Natural and Natural Resources

(D) 'UNEP = United Nations Environment Policy

Question 191.

Which one of following pairs of gases are the major cause of "Greenhouse effect"?

[4 Marks]

(A) CO_2 and N_2O

(B) CFCs and SO_2

(C) CO_2 and O_3

(D) CO_2 and CO

Question 192.

A drupe develops in :

[4 Marks]

(A) Mango

(B) Tomato

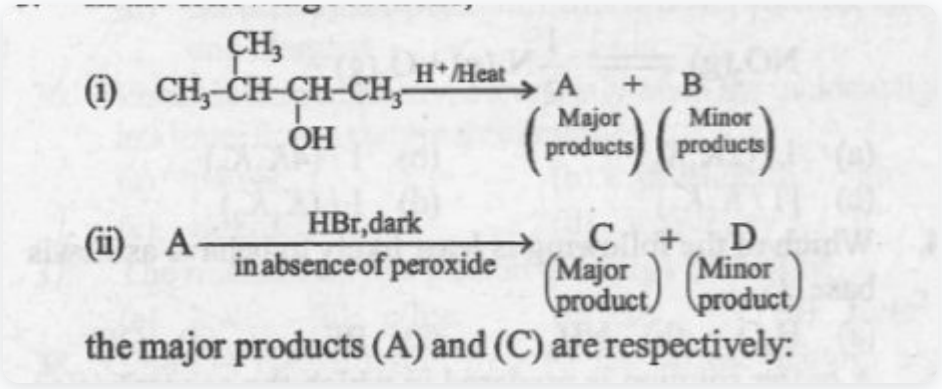
(C) Wheat

(D) Pea

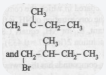
Question 193.

In the following reactions,

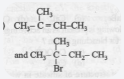
[4 Marks]



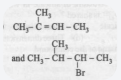
(A)



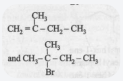
(B)



(C)



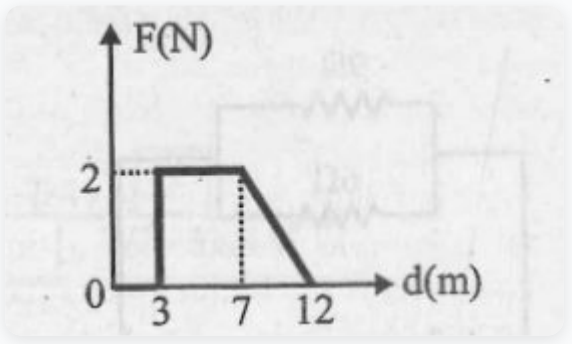
(D)



Question 194.

Force F on a particle moving in a straight line varies with distance d as shown in the figure. The work done on the particle during its displacement of 12 m is

[4 Marks]



(A) 18J

(B) 21J

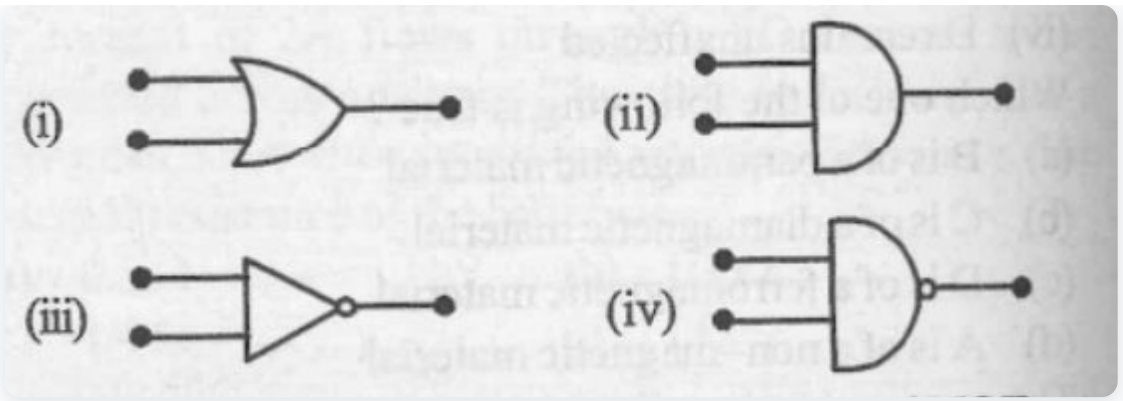
(C) 13J

(D) 26J

Question 195.

Symbolic representation of four logic gates are shown as Pick out which ones are for AND, NAND and NOT gates, respectively

[4 Marks]



(A) (ii), (iii) and (iv)

(B) (iii), (ii) and (i)

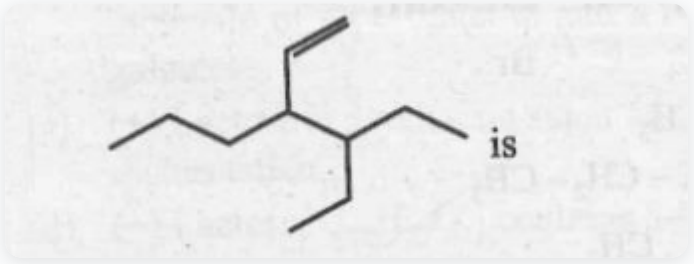
(C) (iii), (iii) and (iv)

(D) (ii), (iv) and (iii)

Question 196.

The correct order of increasing bond length of C-H, C-O, C-C and C=C is:

[4 Marks]



(A) 4-Ethyl-3-propylhex-1-ene

(B) 3-Ethyl-4-propylhex-1-ene

(C) 3-Ethyl-4-ethenylheptane

(D) 3-(1-ethylpropyl)hex-1-ene

Question 197.

The momentum of a photon of energy hv will be

[4 Marks]

(A) hv/c

(B) hv

(C) c/hv

(D) hv/c^2

Question 198.

Which of the following compounds has the lowest melting point ?

[4 Marks]

(A) $CaCl_2$

(B) CaI_2

(C) $CaBr_2$

(D) CaF_2

Question 199.

The correct order of increasing bond length of C–H, C–O, C–C and C=C is:

[4 Marks]

(A) C–O < C–H < C–C < C=C

(B) C–C < C=C < C–O < C–H

(C) C–H < C–O < C–C < C=C

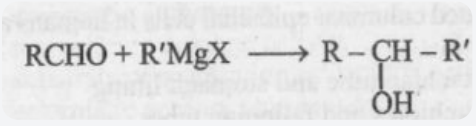
(D) C–H < C=C < C–O < C–C

Question 200.

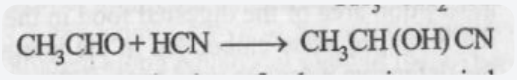
Which one is a nucleophilic substitution reaction among the following?

[4 Marks]

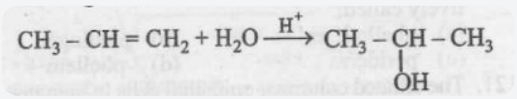
(A)



(B)



(C)



(D)

