Previous Paper Questions

1. Q.Id: 193715

In an amplitude modulation process, the modulation index is μ. The modulation index is changed to μ_1 if the amplitude of modulation signal is increased by 1%. The modulation index is changed to μ_2 if the amplitude of carrier signal is increased by 1%. Which of the following is true statement ?

A) $\mu = \left(\frac{\mu_1 + \mu_2}{2}\right)$

B) $\mu = \frac{|\mu_1 + \mu_2|}{2}$

C) $\mu > \mu_1$

D) $\mu > \mu_2$

2. Q.Id: 193714

The depletion layer thickness of a p-n junction is 10^{-6} m. If the potential across it is 0.2 V, then the electric field will be :

A) 10^7 V/m

B) 2×10^5 V/m

C) 10^5 V/m

D) 10^{-5} V/m

3. Q.Id: 193713

In a p - type semiconductor; the concentration of holes is 2×10^{15} cm^{-3}. The intrinsic carrier concentration is 2×10^{10} cm^{-3}. The concentration of electrons will be

A) 1×10^5 cm^{-3}

B) 2×10^5 cm^{-3}

C) 2×10^{15} cm^{-3}

D) 1×10^{15} cm^{-3}

4. Q.Id: 193712

The amines that undergo carbylamine reaction are

A) Secondary - aliphatic amines, Primary - Aromatic Amines

B) Primary - aliphatic amines, Primary - Aromatic Amines

C) Secondary - aliphatic amines, Secondary - Aromatic Amines

D) Primary - aliphatic amines, Secondary- Aromatic Amines

5. Q.Id: 193711

200 MeV energy is released when one nucleus of ^{235}U undergoes fission. The approximate energy released by fission of 2 kg of uranium is :

A) 8.0×10^{13} J

B) 1.0×10^{15} J

C) 1.63×10^{14} J

D) 1.8×10^{12} J

6. Q.Id: 193710

When benzyl on reaction with KCN, gives 'Q'. The product "Q" on heating with H_2O^+ generates "R". The molecular formula of "R" is

A) $C_8H_8O_2$

B) $C_7H_8O_2$

C) $C_8H_9NO_2$

D) C_8H_7O

7. Q.Id: 193709

If R is Rydberg constant then, the shortest wavelength of Balmer series of hydrogen atom, is :

A) 2/R

B) 9/R

C) R/2

D) 4/R

8. Q.Id: 193708

An electron is moving with a speed in a constant magnetic field, it's de Broglie wavelength
(Assume magnetic field is perpendicular to plane of motion of electron)

A) Increases with time

B) Decreases with time

C) Remains constant

D) Follow sinusoidal behaviour

9. Q.Id: 193707

Acetone reacts with HCN to form a cyanohydrin. It is an example of

A) Electrophilic Addition

B) Electrophilic substitution

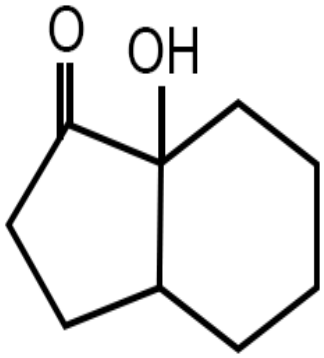
C) Nucleophilic Addition

D) Nucleophilic Substitution

10. Q.Id: 193706

Among the following the one which undergo acid catalysed dehydration relatively easily, is

A)



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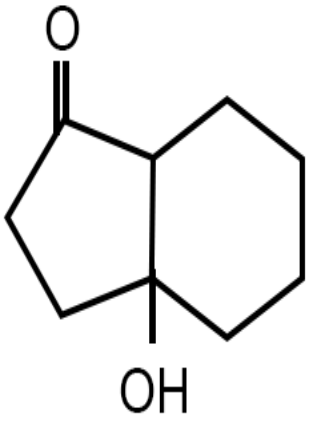

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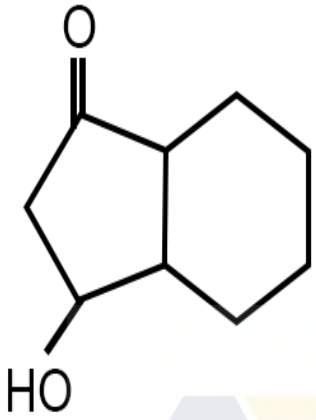
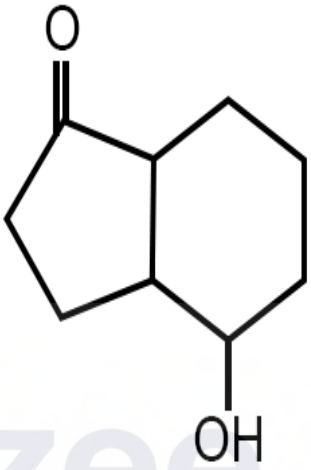
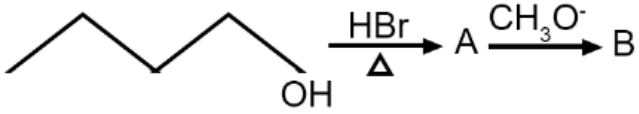


D)

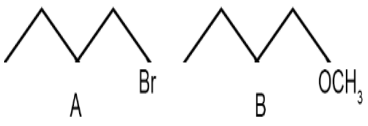


11. Q.Id: 193705

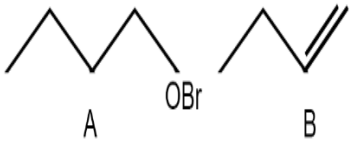
The major products A and B in the following reaction sequences are



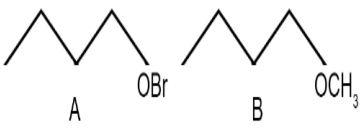
A)



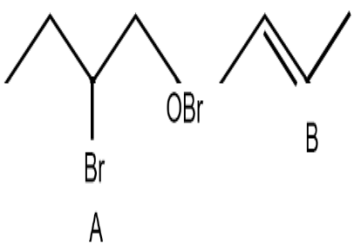
B)



C)



D)



12. Q.Id: 193704

A plane electromagnetic wave of frequency 10 MHz travels in free space in X-Y plane making an angle of 45° with +x - axis. At a particular point in space and time, $\vec{E} = 6\hat{k}V/m$. What is $\overline{B}$ at this point ?

A) $\sqrt{2} \times 10^{-8}(\hat{i}-\hat{j})T$

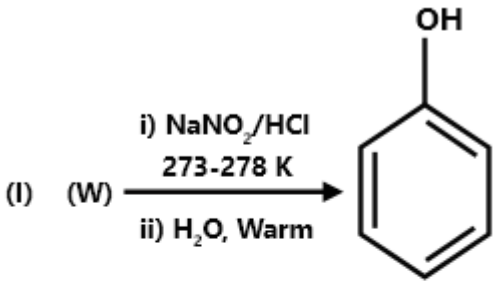
B) $2 \times 10^{8}(\hat{i}-\hat{j})T$

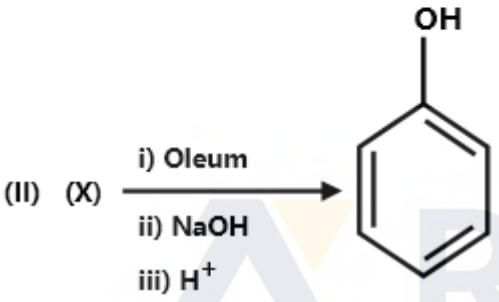
C) $2 \times 10^{-8}(\hat{i}+\hat{j})T$

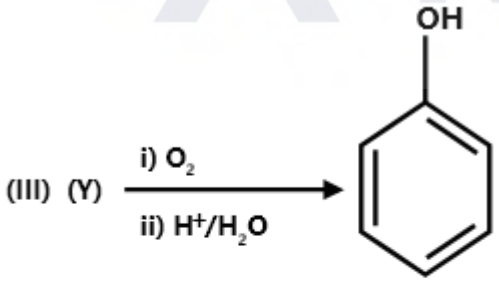
D) $\sqrt{2} \times 10^{-8}(\hat{i}+\hat{j})T$

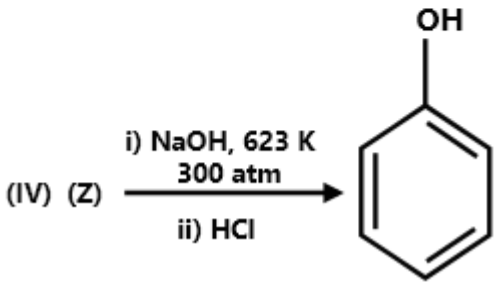
13. Q.Id: 193703

The possible starting material in each of the following reactions are









A) W - Chlorobenzene, X - benzene, Y - Cumene, Z - Aniline

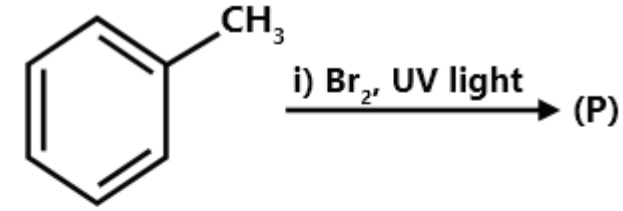
B) W - Aniline, X - benzene, Y - Cumene, Z - Chlorobenzene

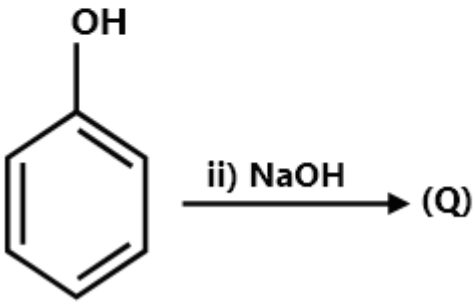
C) W - Aniline, X - Cumene, Y - Benzene, Z - Chlorobenzene

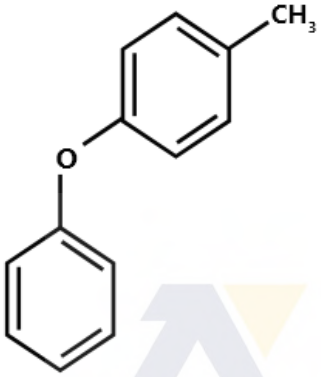
D) W - aniline, X - Cumene, Y - Chlorobenzene, Z - Benzene

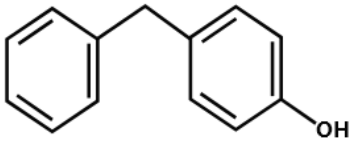
14. Q.Id: 193702

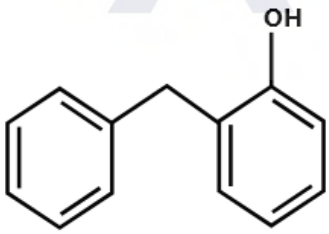
The major product (Q) of the below reactions is

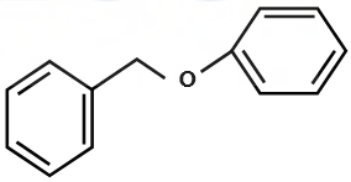




A) 

B) 

C) 

D) 

15. Q.Id: 193701

A light bulb is rated at 110 W for a 220 V supply. The resistance of the bulb is

A) 440 Ω

B) 220 Ω

C) 55 Ω

D) 110 Ω

16. Q.Id: 193700

Find the zero induced emf position for a conducting circular loop of radius r. The circular loop is rotated about its diameter at a constant angular velocity ω in a magnetic field B perpendicular to the axis of rotation.

A) 0^0

B) $\frac{\pi}{3}$

C) $\frac{\pi}{4}$

D) $\frac{\pi}{2}$

17. Q.Id: 193699

The strength of earth's magnetic field on the earth's surface is of the order

A) 10^{-3} T

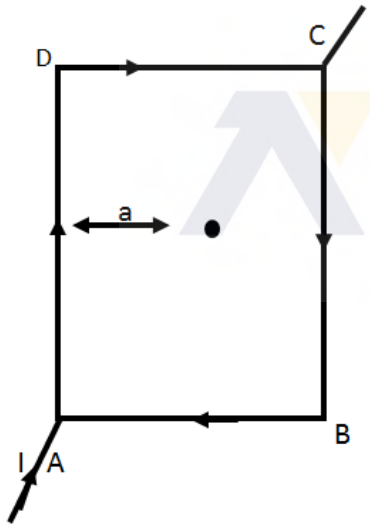
B) 10^{-13} T

C) 10^{-10} T

D) 10^{-20} T

18. Q.Id: 193698

A square loop is made from a uniform wire as shown in the figure. If a battery is connected between the points A & C, then the magnitude of the magnetic field at the centre of the square is



A) $\frac{\mu_0 I}{2\sqrt{2}\pi a}$

B) $\frac{\mu_0 I}{4\sqrt{2}\pi a}$

C) Zero

D) $\frac{\mu_0 I}{2\pi a}$

19. Q.Id: 193697

Electron moves to a region of uniform magnetic field B in the plane perpendicular to B. It finishes an orbit in $1\ \mu s$. What is the nearest value of B among the following ? (mass of electron $= 9 \times 10^{-31}$ kg]

A) 2.5 μs

B) 3.5 μs

C) 35 μs

D) 350 μs

20. Q.Id: 193696

Drift velocity of electrons in a wire of certain length and circular cross section is V_a. The potential difference across the wire and the wire length are doubled but radius of the cross section is halved. What is the new drift speed ?

A) $V_d/2$

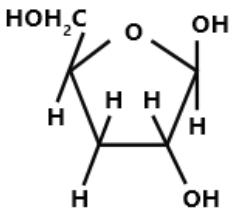
B) $2V_d$

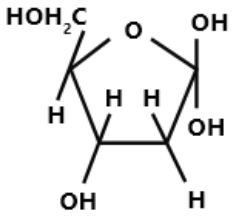
C) V_d

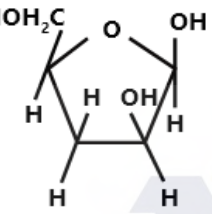
D) $V_d/3$

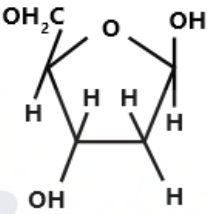
21. Q.Id: 193692

The structure of $\beta-$D - 2 deoxyribose is

A) 

B) 

C) 

D) 

22. Q.Id: 193691

The type of isomerism shown by the complex $[CoCl_2(en)_2]$ is

A) Geometrical isomerism

B) Coordination isomerism

C) Linkage isomerism

D) Ionization isomerism

23. Q.Id: 193689

Among the options, the set of metals can form trihalides is

A) Fe and Co

B) Co and Cu

C) Zn and Cu

D) Fe and Cu

24. Q.Id: 193688

The structure of $XeOF_4$ & XeO_3 respectively are

A) Square pyramidal & Pyramidal

B) Pentagonal Planar & Pyramidal

C) Pentagonal Pyramidal & Planar

D) Pentagonal bipyramidal & Planar

25. Q.Id: 193686

Match the following

Column I : Type of sulphur

Column II : Property

List1	List2
A. $\alpha-$Sulphur	I. Soluble in CS_2
B. S_2	II. Soluble in H_2O
C. $\beta-$Sulphur	III. Puckered ring
D. .	IV. Paramagnetic
E. ..()	V. Chin form

A) A - I, III, B - IV, D - I, III

B) A - I, II, III, B - IV, C - I, III

C) A - II, III, B - II, C - II, V

D) A - I, IV, V, B - II, C - I, IV, V

26. Q.Id: 193682

The correct option from below is

A) Both $\alpha-$ and $\beta-$ forms of black phosphorous can be made from red phosphorous

B) White phosphorous is more reactive due to angular strain in the P_4 molecule

C) Red phosphorous can be prepared from white phosphorous under open air condition

D) Red phosphorous is poisonous and soluble in carbon disulphide

27. Q.Id: 193677

To stop blood from a wound, which of the following sol is preferred?

A) CdS sol

B) $FeCl_3$ sol

C) Silver sol

D) Charcoal sol

28. Q.Id: 193644

For the reaction of type $A+B \rightarrow$ products, it is observed that doubling the concentration of 'A' increases the reaction rate by 4 times, but doubling the concentration of 'B' there is no apparent effect on the rate. The rate equation is

A) $\text{Rate} = k[A][B]$

B) $\text{Rate} = k[A]^2$

C) $\text{Rate} = k[A]^2[B]$

D) $\text{Rate} = k[A]^2[B]^2$

29. Q.Id: 193642

For a chemical reaction $A+B \underset{k_{-1}}{\overset{k_1}{\rightleftharpoons}} C \xrightarrow{k_2} D$

The rate, $\frac{dc}{dt}$ **is**

A) $k_1[A][B]-k_{-1}[C]-k_2[C]$

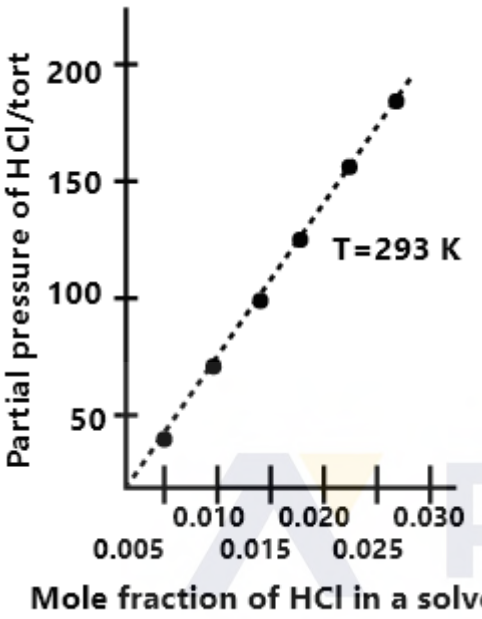
B) $-k_1[A][B]+(k_{-1}+k_2)[C]$

C) $k_1[A][B]$

D) $[k_1-k_2-k_{-1}][C]$

30. Q.Id: 193638

From the graph, the value of Henry's constant for the solubility of HCl gas in cyclohexane is



A) 10 k torr

B) 100 torr

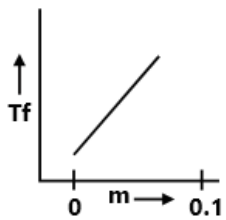
C) 50 torr

D) 2.4×10^2 torr

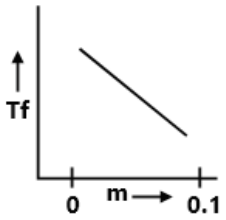
31. Q.Id: 193635

Which one of the following graphs correctly represents change in freezing point as a function of solute concentration?

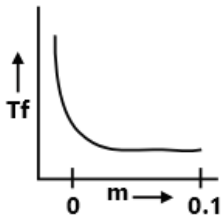
A)



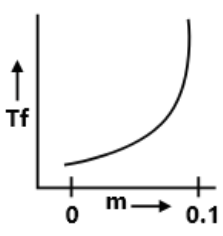
B)



C)



D)



32. Q.Id: 193633

The ratio of packing density in FCC, BCC, simple cubic and HCP, respectively is

A) 0.7 : 0.92 : 1.0 : 1.0

B) 1.0 : 0.7 : 0.92 : 1.0

C) 1.0 : 0.92 : 0.7 : 1.0

D) 0.92 : 0.5 : 1.0 : 0.92

33. Q.Id: 193631

One mole of an organic compound with a double bond and a triple bond is reacted with Br_2/CCl_4. The amount of Br_2 required to completely brominate all $\pi-$ bonds in the compound is (Given Br mass is 80 amu)

A) 480 g

B) 160 g

C) 320 g

D) 240 g

34. Q.Id: 193620

The correct order of decreasingacidity for the following is

A) $CH\equiv CH > CH_2=CH_2 > CH_3-C\equiv CH > CH_3-CH_3$

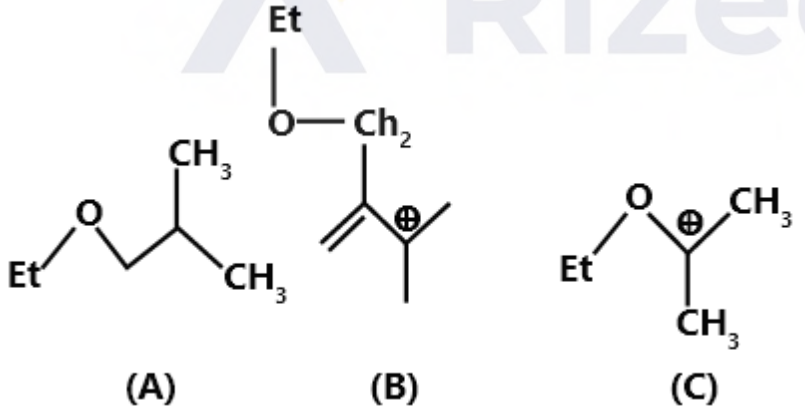
B) $CH_3-CH\equiv C-H > CH\equiv CH > CH_2=CH_2 > CH_3-CH_3$

C) $CH_2=CH_2 > CH_3-CH=CH_2 > CH_3-C\equiv CH > CH\equiv CH$

D) $CH\equiv CH > CH_3-C\equiv CH > CH_2=CH_2 > CH_3-CH_3$

35. Q.Id: 193618

The decreasing order of the stability of the following carbo cations is



(A) (B) (C)

A) A > B > C

B) B > C > A

C) C > B > A

D) A > C > B

36. Q.Id: 193617

The acidity of the soil can be reduced by

A) Sprinkling dil. NaOH solution

B) Spraying CO_2 dissolved water

C) Adding powered Limestone

D) Adding powdered Na_2CO_3

37. Q.Id: 193616

Which one of the following options is true?

A) SnF_4 is ionic

B) PbI_4 can be prepared

C) CCl_4 undergoes hydrolysis

D) $GeBr_4$ is less stable than $GeBr_2$

38. Q.Id: 193615

The correct statements from below are

I. H_3BO_3 **is a liquid**

II. H_3BO_3 **forms a layer structure**

III. In H_3BO_3**, each** BO_3 **unit is joined by hydrogen bonds**

IV. H_3BO_3 **is tribasic**

A) I and II

B) II and III

C) III and IV

D) II and IV

39. Q.Id: 193613

Which of the following compounds has the highest hydration energy?

A) $BeSO_4$

B) $CaSO_4$

C) $SrSO_4$

D) $BaSO_4$

40. Q.Id: 193612

Among the fuels given, the fuel with the highest calorific value (kJ/mole) is

A) $H_2(g)$

B) $CH_4(g)$

C) CNG (g)

D) LPG

41. Q.Id: 193611

Acetylsalicylic acid has pK_a **value 3.5. The pH of gastric juice in human stomach is 2 - 3 and the pH in the small is approximately 7.4. Then acetylsalicyclic acid will be**

A) Unionized in the stomach and ionized in the small intestine

B) Unionized in the small intestine and in the stomach

C) Completely get ionized in both small intestine and stomach

D) Ionized in the stomach and almost unionized in the small intestine

42. Q.Id: 193608

At 298 K, the ratio of dissociated water to that of undissociated water is (Assume pure water)

A) 1×10^{-7}

B) 1.8×10^{-9}

C) 1×10^{-3}

D) 1000

43. Q.Id: 193604

The number of translational degrees of freedom for $NH_3\,(g)$ **is**

A) 4

B) 5

C) 3

D) 9

44. Q.Id: 193603

Number of moles of dichromate needed to oxidise one mole of Sn^{2+} **is3**

A) 3

B) 2

C) 1/3

D) 1/2

45. Q.Id: 193602

20 g of $CaCO_3$ **on heating produces x amount of** CO_2**. If the final weight of** $CaCO_3$ **after the reaction is 5g. The amount of** CO_2 **liberated in litres at STP is**

A) 44

B) 3.36

C) 22

D) 6.66

46. Q.Id: 193598

The units of surface tension and viscosity of a liquid, respectively are

A) $kg\,m^{-1}\,s^{-1}, Nm^{-1}$

B) $Nm^{-1}, kg\,m^{-1}\,s^{-1}$

C) $kg\,m^{2}\,s^{-1}, Nm^{-2}$

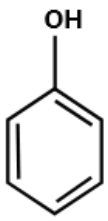
D) $Nm^{-1}, kg\,m^{2}\,s^{-1}$

47. Q.Id: 193596

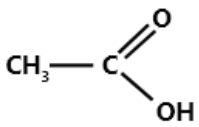
The compound with maximum vapour pressure at a given temperature is

A) $CH_3-CH_2-CH_2-CH_2OH$

B)



C)



D) $CH_3-CH_2-O-CH_2-CH_3$

48. Q.Id: 193594

What is the hybridization present in the complex $[Co(NH_3)_6]^{3+}$

A) d^2sp^3 **B)** sp^3d^2

C) dsp^3 **D)** sp^3d

49. Q.Id: 193592

Th molecule which has the maximum bond enthalpy is?

A) N_2 **B)** HF

C) F_2 **D)** CO

50. Q.Id: 193590

Which of the following statements are correct?

A. The separation of actinoid elements from each other is difficult

B. The co valency of the compounds of actinoid metals decrease from left to right along actinoid series.

C. The compounds of Lawrencium are most covalent

D. U and Th occur naturally in substantial quantities

A) A and B only **B)** B and C only

C) A, C and D only **D)** A, B, C and D

51. Q.Id: 193588

In which of the following options, the law of triad is applicable?

A) Na, K, Rb **B)** Cl, Br, I

C) C, N, O **D)** Mg, Ca, Sr

52. Q.Id: 193585

Both the position and exact velocity of an atom cannot be determined simultaneously and accurately. This known as

A) de Broglie principle **B)** Hamiltonian law

C) Heisenberg uncertaintyprinciple **D)** Bohr theory of hydrogen atom

53. Q.Id: 193580

The ratio of potential energy (PE) and total energy of an electron in a Bohr orbit of a hydrogen like atom is

A) 1 **B)** 2

C) -1 **D)** -1/2

54. Q.Id: 193563

Two equal and opposite charges are placed at point P and Q. The null point on the line joining them is

Note : For this question, discrepancy is found in question/ answer. Full marks is being awarded to all candidates

A) at P

B) at Q

C) Middle of line joining P and Q

D) Outside the line joining P and Q

55. Q.Id: 193562

The electric field in a region is given as $\vec{E} = (10\hat{i} + 20\hat{j})V/m$. The net flux passing through a square area of side 2m parallel to x - z plane is :

A) $80\sqrt{5}$ Vm

B) $40\sqrt{5}$ Vm

C) 40 Vm

D) 80 Vm

56. Q.Id: 193561

For what distance the ray optics will be a good approximation then the aperture is 5 mm wide and the wavelength is 450 mm ?

A) 45.55 m

B) 55.55 m

C) 35.55 m

D) 40.55 m

57. Q.Id: 193560

Condition for total internal reflection to occur are :

(a) The ray should travel from rarer to denser medium

(b) The ray should travel from denser to rarer medium

(c) The angle of incidence should be greater than the critical angle

(d) The angle of incidence should be less than the critical angle

A) (b, c)

B) (a, c)

C) (a, d)

D) (b, d)

58. Q.Id: 193559

The waves of sound of wavelength 1.2 m and 1.25 m in a medium produce 90 beats in 10 s. The speed of sound in the medium is

A) 300 m/s

B) 290 m/s

C) 270 m

D) 240 m/s

59. Q.Id: 193547

The rms speed of H_2 molecules is C at 27^oC. The molecules break into atoms. What should be the new temperature such that atoms have same speed as molecules

(Assume the mass of H_2 molecules is twice the mass of H-atom)

A) 600 K

B) 150 K

C) 100 K

D) 300 K

60. Q.Id: 193546

In an isothermal process if heat is supplied to an ideal gas, then

A) The internal energy of the gas will decrease

B) The internal energy of the gas will increase

C) The gas will do positive work

D) The gas will do negative work

61. Q.Id: 193545

Which of the following statement is incorrect

A) In an adiabatic process the system is insulated from surroundings and the heat absorbed or released is zero,

B) In an isochoric process volume is variable.

C) In isobaric process pressure is constant

D) In a cyclic process the system returns to initial state

62. Q.Id: 193544

A block of ice at 0^oC is kept on the upper surface of a slab of thickness 10 cm and having a lower surface area of $3360\ cm^2$. The lower surface of the slab is exposed to steam at 100^oC. 5g ice melts in 10 min. What is the thermal conductivity of the slab :

[latent heat of fusion of ice $3.36\times10^5\ Jkg^{-1}$)

A) $6.3\times10^{-3}\ Wm^{-1^o}C^{-1}$

B) $7.3\times10^{-3}\ Wm^{-1^o}C^{-1}$

C) $8.3\times10^{-3}\ Wm^{-1^o}C^{-1}$

D) $9.3\times10^{-3}\ Wm^{-1^o}C^{-1}$

63. Q.Id: 193543

Match the following lists

List -I	List -II	List –iii
Lignified walled dead cells	Plants are less active	Secondary growth of root
During unfavourable seasons	Pericycle above protoxylem Eiquid endosperm maryokinesis is not cokinesis	Medullary ray
Cambium forming narrow band of rect statements parenchyma	Does not conduct water	Less number of xylem vessels with narrow lumen
Canblum forms below phloem ng of the gut are mitotic division	Between secondary xylem and phloem	Heart wood

A) (A,iii.IV), (B,i,III) (C,ii.II) (D,iv.I)

B) (A,ii.II), (B,iii,III) (C,iv.I) (D,I,iv.)

C) (A,i.IV), (B,ii,III) (C,iv.II) (D,iii.I)

D) (A,iii.IV), (B,i,III) (C,iv.II) (D,ii.I)

64. Q.Id: 193542

An ideal gas at temperature T & pressure P fills the chamber A which is separated from chamber B which has vacuum. The two chambers are thermally insulated. When plug is removed the gas fills both the chambers. Both A & B have same volume. What will be the pressure & temperature of the gas after it comes to equilibrium ?

A) P, T

B) P/2, T

C) P/2, T/2

D) P, T/2

65. Q.Id: 193541

Total pressure at the bottom of a filled water tank is 2.0 atm. If a small hole is made at the bottom of the tank, then what is the velocity of flux ?
[Use density of water as $1000\ \text{kg/m}^3, 1\ \text{atm} = 10^5\ \text{Pa}$ **]**

A) 10 m/s

B) $10\sqrt{2}\ \text{m/s}$

C) 20 m/s

D) $20\sqrt{2}\ \text{m/s}$

66. Q.Id: 193540

A cylindrical wire of length l, density d is kept on the surface of liquid. What can be the maximum radius (r) of the wire such that it is in equilibrium due to surface tension (T) of liquid :

(Assume l >> r and the contact angle is 0^{o}, g is acceleration due to gravity)

A) $\sqrt{\frac{2T}{\pi dg}}$

B) $\frac{2T}{\pi dg}$

C) $\sqrt{\frac{T}{\pi dg}}$

D) $\frac{T}{\pi dg}$

67. Q.Id: 193539

Match the following regarding stem cells

List1	List2
A. Totipotent cell	1. Haemopoietic stem cells
B. Pluripotent cell	2. Muscle stem cells
C. Multipotent cell	3. 8 cell stage blastocyst
D. Unipotent cell	4. Inner cell mass
E. -	5. Mast cell

A) A->3; B-> 5; C-> 4; D-> 2

B) A->3; B-> 4; C-> 1; D-> 2

C) A->2; B-> 3; C-> 4; D-> 1

D) A->5; B-> 3; C-> 2; D-> 4

E) -

68. Q.Id: 193538

A body is subjected to a stress resulting in the change in volume of the body. The stress must be

A) Tensile

B) Compressive

C) Hydraulic

D) Shearing

69. Q.Id: 193537

Consider a satellite which is rotating in a circular orbit of radius $2R_E$ about the earth. The mass of satellite is 1600 kg. What is the energy required to transfer it to a circular orbit of radius $8R_E$?

[use $g = 10\ ms^{-2},\ R_E = 6 \times 10^6\ m$**]**

A) 18×10^9 J

B) 9×10^9 J

C) 27×10^9 J

D) 3×10^9 J

70. Q.Id: 193536

hinny is an interspecific hybrid of

A) Male horse and female donkey

B) Male donkey and female horse

C) jack and jennet

D) Mare and Stalllion

71. Q.Id: 193535

ratio of long winged and vestigial winged Drosophila are formed when a pure long winged (dominant) and a pure vestigial winged (recessive) Drosophila are crossed

A) 3 : 1

B) 1 : 2 : 1

C) 3 : 1; 1 : 2 : 1

D) 1 : 0

72. Q.Id: 193534

An oscillating simple pendulum slow down its motion and finally stops due to ?

A) Air friction

B) Earth's gravity

C) Mass of pendulum

D) Centre of gravity

73. Q.Id: 193533

Match the following

Disorder Reason

List1	List2
A. Thalassemia	1. Point mutation
B. Haemophilla	2. Autosomal recessive metabolic disorder
C. Sickle cell anaemia	3. Abnormal haemoglobin
D. Alkaptonuria	4. Non - disjuncion of chromosomes
E. -	5. Sex linked recessive disorder

A) A->3; B->4; C->1; D->2

B) A->3; B->5; C->1; D->2

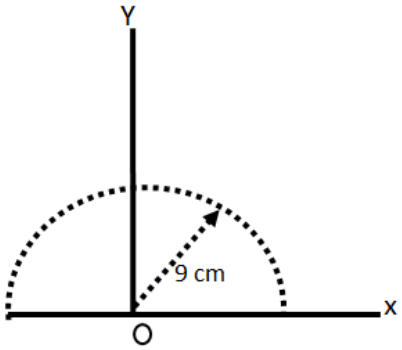
C) A->2, B->1; C->5; D->3

D) A->4; B->3; C->2; D->1

E) -

74. Q.Id: 193532

A homogenous semi circular plate of radius 9 cm placed at the origin as shown in the figure. The coordinate of center of mass is (Assume thickness is negligible)



A) (0 cm, 6 cm)

B) (0 cm, 4.5 cm)

C) (-4.5 cm, 0 cm)

D) (-4.5 cm, 4.5 cm)

75. Q.Id: 193531

A solid cylinder rolls without slipping from top of an incline of length 2.7 m with angle of inclination 30^{o}. What will be its speed when it reaches the bottom of the incline ? [Use $g = 10\ m/s^2$]

A) 2 m/s

B) $2\sqrt{2}\ m/s$

C) 3 m/s

D) $3\sqrt{2}\ m/s$

76. Q.Id: 193530

Colour blindness in human beings is

A) Sex linked recessive disorder

B) Sex limited recessive disorder

C) Sex inked dominant disorder

D) Sex influenced disorder

77. Q.Id: 193529

Identify one of the physical barrier in females.

A) vaults

B) Saheli

C) Implants

D) Skin patches

78. Q.Id: 193528

Skene's glands in females are homologous to

A) Seminal veseicle

B) Prostate gland

C) Cowper gland

D) Sebecious glands

79. Q.Id: 193527

Payer's patches of small intestine are

A) Primary lymphoid organs

B) Secondary lymphoid organs

C) Immunoglobulins

D) Interferons

80. Q.Id: 193526

A rod of length L can rotate about end 'O'. What is the work done if the rod is rotated by 180^{o} **:**

A) MgL

B) $\frac{MgL}{2}$

C) $\frac{3}{2}MgL$

D) $\frac{1}{4}MgL$

81. Q.Id: 193525

Statement I : Due to HIV, the number of T_H **cells progressively decrease in an infected person.**

Statement II : Thymus gland of mammals is a secondary lymphoid organ.

A) Both Statement I and Statement II are true

B) Both Statement I and Statement II are false

C) Statement I is true. But Statement II is false

D) Statement I is false, But Statement II is true

82. Q.Id: 193524

A machine gun fires 360 bullets per minute. Each bullet travels with velocity of 500 m/s. If the power of the machine gun is 4.5 kW then the mass of each bullet is

A) 2g

B) 5g

C) 6g

D) 10g

83. Q.Id: 193523

Match the following lists:

List1	List2
A. Epidermis	I. Thin walled cells
B. Tapetum	II. One cell thick
C. Endothecium	III. Inner most layer
D. Stomium	IV. fibrousthickenings
E. '	V. Meiosis

A) A->(II),B->(III),C->(I),D-> (IV)

B) A->(II),B->(III),C->(IV),D-> (III)

C) A->(II),B->(V),C->(IV),D-> (III)

D) A->(IV),B->(I),C->(V),D-> (II)

84. Q.Id: 193522

Non iodised hormone secreted by the largest endocrine gland is

A) Thyroxine

B) Parathormone

C) Adrenaline

D) Calcitonin

85. Q.Id: 193521

Assertion (A): Molecular farming is large scale production of biochemicals from plants.

Reason (R): Transgenic plants are bioreactors for commercial production of antibodies.

The correct option among the following is

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

86. Q.Id: 193519

Match the following lists.

List1	List2
A. Remove nucleotides from the end of the DNA	I. Polymerases
B. Restriction enzyme	II. Endonucleases
C. Enzyme which cuts at specific nosition of DNA	III. Ligases
D. tick the complementary cut ends of DNA with H_2, bond	IV. Nucleases
E. '	V. Exonucleases

A) A->(V).B->(IV),C->(II),D->(III) **B)** A->(V).B->(I),C->(III),D->(II)

C) A->(III).B->(II),C->(IV),D->(V) **D)** A->(IV).B->(I),C->(II),D->(III)

87. Q.Id: 193518

Find the position of the particle which starts from rest at time t = 10 s, given the force acting on the particle with a mass of 50 g is $(5\vec{i} + 10\vec{j})$N

A) $(10000\vec{i} + 5000\vec{j})$m **B)** $(5000\vec{i} + 5000\vec{j})$m

C) $(5000\vec{i} + 10000\vec{j})$m **D)** $(10000\vec{i} + 10000\vec{j})$m

88. Q.Id: 193517

Study the following table and pick up the correct combinations

S No	Hormone	Chemical nature	Function
1.	Melatonin	Amine hormone	Regulation of circadian rhythms of the body
2.	Oxytocin	Peptide hormone	Stimulate powerful contractions of uterus during child birth
3.	Insulin	Protein hormone	Increase the uptake and utilization of glucose by body cells
4.	Testosterone	Steroid hormone	Development and maturation of male sex organs

A) I only

B) I, II only

C) I, II and III

D) I, II, III and IV

89. Q.Id: 193516

Study the following statements regarding human brain.

(I) white matter of cerebellum is called arbor vitae

(II) Cerebral hemispheres are centres for memory and communications

(III) Pons contains the pneumotoxic centre.

(IV) Limbic system involved in expression of emotional reactions

Identify correct statements from the above

A) I , II only

B) I, II, III only

C) I, II, III and IV

D) II, III and IV

90. Q.Id: 193515

An object of mass 15 kg moves at a constant speed of $15\ ms^{-1}$. A constant force, which acts for 5 seconds on the object, gives it a speed $5\ ms^{-1}$ in opposite direction. The force acting on the object is ?

A) -50 N

B) 60 N

C) -4 N

D) -60 N

91. Q.Id: 193514

Choose the wrong statements.

(A) Expressed sequences of eukaryoticgenes are exons

(B) Intervening gene sequences of eukaryotes that do not appear in processed RNA are cistrons

(C) Process of removal of introns and joining of exons in defined order is splicing

(D) Monocistronic transcriptional unit has only exons

A) A.B **B)** B.C

C) A.D **D)** B.D

92. Q.Id: 193513

This part of brain is called gyroscope of the body

A) Cerebral hemispheres **B)** Diancephalon

C) Pones varoli **D)** Cerebellum

93. Q.Id: 193512

Choose the wrong statements.

(A) DNA directly codes for the synthesis of proteins

(B) DNA and RNA both can function as genetic material

(C) DNA is storage of genetic material and RNA transfers genetic information

(D) RNA is indirectly codes for the synthesis of protein

A) A.B **B)** B.C

C) A.D **D)** B,D

94. Q.Id: 193511

A particle is moving in the r-y plane and its coordinates at any time t are given by

$x = 5 \cos \omega t$

$y = 5 \sin \omega t$

Where $\omega = \frac{\pi}{4}$ rads **. The direction of force it experiences at t = 3 s is,**

A) $\hat{i}+\hat{j}$ **B)** $\hat{i}-\hat{j}$

C) $\hat{i}$ **D)** $\hat{j}$

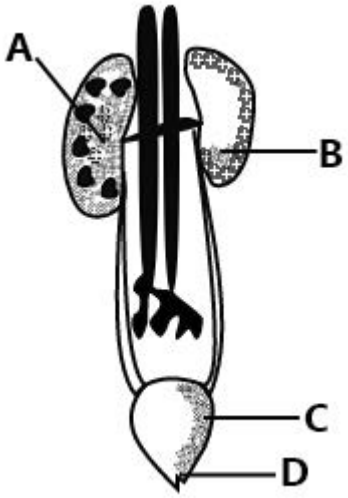
95. Q.Id: 193510

In a striated myofibril, the F - actin of thin filament is formed by

A) G - actin **B)** Meromyosin

C) Troponin - C **D)** Tn - I

96. Q.Id: 193509



identify A, B, C, D in the above diagram of excretory system of man.

A) A- Medulla
B- kidney
C- Urethra
D- urinary bladder

B) A- Renal pelvis
B- kidney
C- urinary bladder
D- Urethra

C) A- Renal pelvis
B- Left kidney
C- Ureter
D- urinary bladder

D) A- Hilus
B- Renal pelvis
C- urinary bladder
D- Ureter

97. Q.Id: 193508

Chromatin is constituted by:

(A) Non Histone chromosomal proteins

(B) Densely packed DNA with dark stain

(C) Repeated units of DNA with 200bp length

(D) Repeated units of negatively charged DNA wrapped by positively charged histone protein (1)

A) I,II

B) III,IV

C) I,III

D) II,IV

98. Q.Id: 193507

Assertion (A) : Wall of heart of amn release the atrial natriuretic factor.

Reason (R) : Increased flow of blood into the atria.

The correct option among the following is

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

99. Q.Id: 193506

Identify the scientists who rediscovered the Mendel's result on the inheritance of characters.

(A) de Vries

(B) Morgan

(C) von Tschermak

(D) Sutton

A) A,B

B) B,C

C) A,D

D) A,C

100. Q.Id: 193505

At t = 0, a particle starts moving from origin with velocity $5.0\,\hat{i}\,m/s$ **and it moves in x-y plane due to a force having a constant acceleration of** $(2.0\hat{i}+3.0\hat{j})m/s^2$**. Find the coordinate of the particle at t = 6s.**

A) (x = 54 m, y = 66 m)

B) (x = 66 m, y = 54 m)

C) (x = 36 m, y = 48 m)

D) (x = 48 m, y = 36 m)

101. Q.Id: 193504

Assertion (A): If the allele produces a less functional enzyme or non functional enzyme the phenotype may be affected.

Reason (R): The phenotype/trait will not be dependent on the functioning of the unmodified allele.

The correct option among the following is:

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

102. Q.Id: 193503

Identify the wrong statements.

(A) Cytochrome C is a small protein attached to inner surface of the outer membrane

(B) Electrons from complex I are transferred to ubiquinone located within the inner membrane

(C) The temperature optimum for photosynthesis of different plants does not depend on the habitat that they are adapted to.

(D) There is no linear relationship between incident light and CO_2**, fixation rates at low light intensities,**

A) A, B, C

B) B,A.D

C) C.B.D

D) A,C.D

103. Q.Id: 193502

Clotting of blood banks can be prevented by addition of

A) Calcium ions

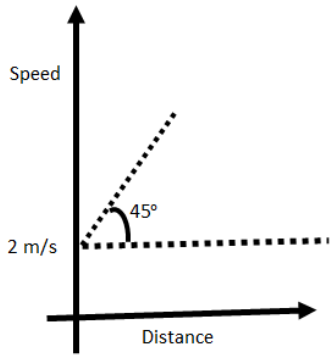
B) Citrates

C) Omega 3 fatty acid

D) Naphthoquinone

104. Q.Id: 193501

The speed distance graph is shown below. At what instant of time (in sec) the speed becomes 4 m/s ?



A) t = In (2)

B) t = In (4)

C) t = In (8)

D) t = In (6)

105. Q.Id: 193500

identify the biomolecule common to respiration involving fat, carbohydrate and protein.

A) Pyruvic acid

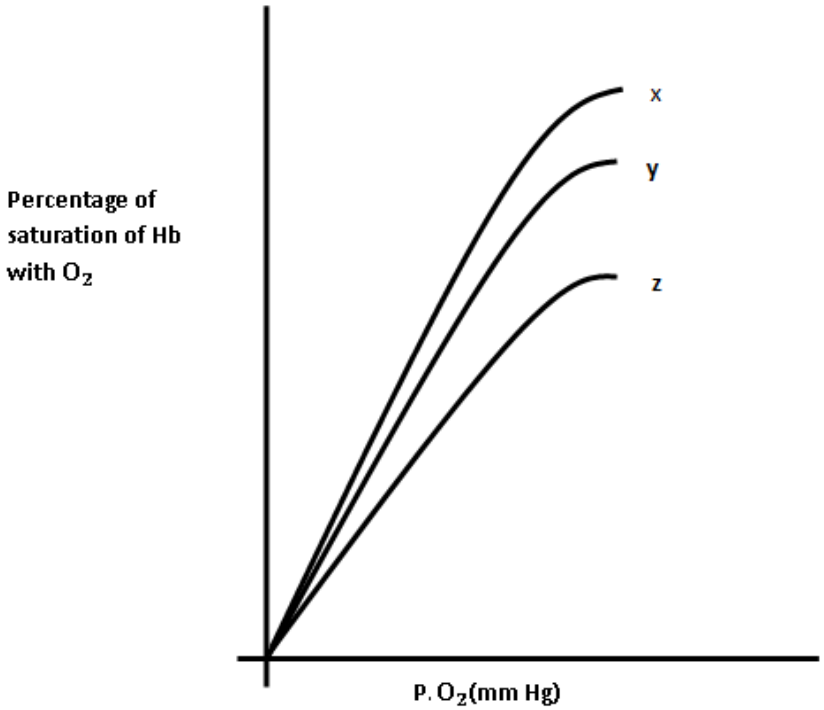
B) Glucose-6-phosphate

C) Citric acid

D) Acetyl CoA

106. Q.Id: 193499

Study the following oxygen - haemoglobin dissociation curve which explains the effect of p^H on the stauration of haemoglobin with oxygen. Find out option that gives the correct descending order of P^H for x, y and z



A) z > y > k

B) X > Z > Y

C) y > x > z

D) x > y > z

107. Q.Id: 193498

Identify the substrate level phosphorylation reactions among the following.

(A) Triose bis Phosphate to triose phosphate

(B) Phosphoglycerate to Phosphoenol pyruvate

(C) Succinyl CoA to Succinic acid

(D) Malic acid to OAA

A) A.B

B) B.C

C) A.C

D) B.D

108. Q.Id: 193497

A body starts from rest with uniform acceleration and moves in a straight line. If its speed after 'n' seconds is 'v', then the distance covered in the last 2 sec is.

A) $\frac{2v(n+1)}{n}$

B) $\frac{v(n+1)}{n}$

C) $\frac{v(n-1)}{n}$

D) $\frac{2v(n-1)}{n}$

109. Q.Id: 193496

The maximum volume of air a person can breath in after forced expiration is called

A) Total lung capacity

B) Vital capacity

C) Inspiratory capacity

D) Inspiratory Reserve Volume

110. Q.Id: 193495

If momentum (P), area (A) and time (T) are taken to be the fundamental quantities then the dimensional formula for Power is

A) $P^{\frac{1}{2}}AT^{-1}$

B) P^2AT^{-2}

C) $PA^{\frac{1}{2}}T^{-2}$

D) $PA^{-1}T^{-2}$

111. Q.Id: 193494

Assertion (A): There is a sufficient reason to believe that first cells on this planet lived in an atmosphere lacking oxygen.

Reason (R): Thus even all living organisms retain the enzymatic mechanism to completely oxidize glucose without the help of oxygen. The correct option among the following is

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

112. Q.Id: 193493

Match the following

List1	List2
A. Global warming	1. mercury
B. Eutrophication	2. UV - B rays
C. Biomagnification	3. Methane
D. Ozone depletion	4. Algal blooms
E. -	5. Terror Bengal

A) A-> 3; B-> 5; C-> 1; D->2

B) A-> 3; B-> 4; C-> 1; D->2

C) A-> 2; B-> 1; C-> 4; D->3

D) A-> 5; B-> 4; C-> 2; D->1

113. Q.Id: 193492

Identify the differences between C_3 and C_4 plants among the following characters.

(A) Photorespiration rate

(B) Activity of RuBisco

(C) Type of light reactions

(D) CO_2 primary acceptor from atmosphere

(E) Anatomy of the leaf

A) A ,B,C

B) B,C,D

C) C,D,E

D) A,D,E

114. Q.Id: 193491

Which of the following is a possible final step in applying the scientific method ?

A) Formulating a hypothesis

B) Building a theory

C) Analysis of test results

D) Formulation of a question

115. Q.Id: 193490

Study the following table and pick up the correct combinations.

S No	Interaction	Species A	Species B
1.	Mutualism	+	+
2.	Competition	-	+
3.	Predation	+	-
4.	Parasitism	-	-
5.	Commensalism	0	+
6.	Amensalism	-	0

A) 2, 4, 3, 5

B) 1, 2, 3, 5

C) 2, 3,4, 6

D) 1, 3, 5, 6

116. Q.Id: 193489

Assertion (A): When electrons move through the transport chain, protons are transported across the membrane.

Reason (R): Because the primary acceptor of electron located towards the outside of the membrane, transfers its electrons to a H carrier (PQ).

The correct option among the following

is: (

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but it is false

D) A is false but R is true

117. Q.Id: 193488

The orientation to light of a non - motile organism or part of its body is called

A) Phototaxis

B) photokinesis

C) Phototropism

D) Photoperiodism

118. Q.Id: 193487

Study the following and pick up the correct statements.

(I) Contraction of dorsoventral muscles depress the wings in cockroach

(ii) Stomodeal valve lies between gizzard and mesenteron in cockroach.

(iii) In cockroach, the spiracles are holopneustic type

(IV) Opening and closing of spiracles is influenced byO_2 tension in haemolymph andCO_2 tension in tracheae

A) 1, 2

B) 2, 3

C) 3, 4

D) 1, 3

119. Q.Id: 193486

assertion (A): Chromatographic separation of leaf pigments shows that leaves have four different pigments.

Reason (R): Pigments absorb light at specific wavelengths and help in the process of photosynthesis. The major leaf pigments are chlorophyll-a, chlorophyll-b, xanthophylls and carotenoids.

The correct option among the following is:

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

120. Q.Id: 193485

Choose correct statement.

(A) Carbonic anhydrase converts 20 molecules of H_2CO_3, in an hour

(B) By attaching the substrate the enzyme active site, the structure of substrate transform into products

(C) Stability structural state related molecule

(D) The difference between average energy that transition state called activation energy

A) A.B.C

B) B,C,D

C) A.B.D

D) A.C.D

121. Q.Id: 193484

Choose the correct statements.

(A) The total annual account of wet organic matter of the forest can be estimated with the annual net productivity amount of standing forest.

(B) Ecosystems also exert direct physical influence that help to moderate regional and local weather.

(C) Decline in pollinator activity could mean rising cost of pollination dependent fruits and vegetables

(D) Constanza and his colleagues have tried to put price tag on nature's life support services.

A) A,B,C

B) B,C,D

C) A,C,D

D) A,B,D

122. Q.Id: 193483

Stomodeal valve is formed from

A) Crop

B) Mesenteron

C) Gizzard

D) Ventriculus

123. Q.Id: 193482

Which of the following abdominal segment of cockroach is without a nerve ganglion ?

A) 1st segment

B) 2nd segment

C) 5th segment

D) 7th segment

124. Q.Id: 193481

These are sleeping pills.

A) Amphetamines

B) Barbiturates

C) Benzodiazepines

D) Cannabinoids

125. Q.Id: 193480

Statement I : Haemophilus influenzae causes the typhoid.

Statement II: Typhoid can be confirmed by widal test.

A) Both Statement I and Statement II are true

B) Both Statement I and Statement II are false

C) Statement I is true. But Statement II is false

D) Statement I is false. But Statement II is true

126. Q.Id: 193479

Study the following and pick up the correct combinations.

S No	Type of parasite	Lives in-host	Example
1.	Cytozoic	Live among cells of tissues of host	Plasmodium
2.	Histozoic parasites	Live within the hosts cells	Wuchereria
3.	Coelozic parasites	Live in cavities of host	Ascaris
4.	Hyper parasites	Live in the body of another parasite	Nosema

A) 1, 2 **B)** 2, 3

C) 3, 4 **D)** 2, 4

127. Q.Id: 193478

Multiple fission in Amoeba is called

A) Schizogony **B)** Gametogony

C) Sporogony **D)** Sproulation

128. Q.Id: 193477

Match the following lists

List1	List2
A. Submerged rooted hydrophyte	I. Hydrilla
B. Rooted hydrophyte with floating leaves	II. Salvinia
C. Free floating hydrophyte	III. Victoria regia
D. Submerged suspended hydrophyte	IV. Limnophila
E. :	V. Vallisnaria

A) A->(III),B->(I),C->(V), D->(IV) **B)** A->(IV),B->(III),C->(I), D->(I)

C) A->(IV),B->(I),C->(V), D->(III) **D)** A->(II),B->(IV),C->(III), D->(I)

129. Q.Id: 193476

Match the following

Type of Flagellum Example

List1	List2
A. Stichonematic	1. Cryptomonas
B. Pantonematic	2. Astasia
C. Anematic	3. Chlamydomonas
D. Acronematic	4. Monas
E. -	5. Urceolus

A) A->2; B->4; C->3; D->5 **B)** A->2; B->3; C->2; D->4

C) A->1; B->4; C->5; D->2 **D)** A->2; B->4; C->5; D->3 **E)** -

130. Q.Id: 193475

Study the following and pick up the correct combinations.

S No	Class	Unique character	Flourished
1.	Amphibia	Buccopharyngeal respiration	Carbonferous period
2.	Reptilia	Jacobson organs	Mesozoic era
3.	Mammalia	Pinna	Coenozoic era
4.	Pisces	Meninx primitiva	Cretaceous period

A) 1, 2, 4 **B)** 2, 3, 4

C) 1, 2, 3 **D)** 1, 3, 4

131. Q.Id: 193474

Identify the tissues based upon the following characters respectively.

(1) Large, colourless, empty cells along with leaf veins are used for absorption of water

(II) Cells much elongated, unbranched pointed needle like apices and thick cell wall are dead at maturity

(III) The cells are longitudinally arranged with perforated end walls

(IV) Cells left behind from shoot apical meristem

(A) Axillary bud (B) Phloem fibre (C) Bulliform cells (D) Sieve tube elements

A) I(A) - II(B) - (III)D - (IV)C **B)** I(B) - II(C) - III(D) - IV(A)

C) I(C) - II(B) - iii(D) -IV(A) **D)** I(A) - ii(C) - III(D) - IV (B)

132. Q.Id: 193473

Assertion (A) : During pulmonary respiration in frog, buccopharyngeal cavity acts like a force pump.

Reason (R) : when the floor of buccopharyngeal cavity is lowered, air forces the glottis to open and reach the lungs.

The correct option among the following is

A) Both A and R atr true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

133. Q.Id: 193472

Choose incorrect among the following.

(A) Cells the lining gut replaced constantly

(B) Formation of liquid endosperm takes place, karyokinesis followed cytokinesis.

(C) In telophasethe chromosomes reach poles and start condense to form the chromatic network

(D) In quiescent stage the cell is metabolically inactive

A) A,B

B) B,C

C) C,D

D) A,D

134. Q.Id: 193471

Animals of this class in Annelida have definite number of segments

A) Cestoda

B) Polychaeta

C) Oligochaeta

D) Hirudinea

135. Q.Id: 193470

Study the following table and pick up the correct combinations.

S No	Class	Common name of animals	Special feature
1.	Echinoidea	Sea urchins	Aristotle's lantern
2.	Cephalopoda	Clams	Crystalline style
3.	Holothuro idea	Sea cucum bers	Respiratory trees
4.	Gastropoda	Squids	Torsion

A) 2, 4

B) 1, 3

C) 1, 2

D) 2, 3

136. Q.Id: 193469

Identify the functions of these proteins respectively, and match them

(i) Trypsin (ii) Receptor (iii) Insulin (iv) GLUT-4 (v) Collagen

(A) Enables glucose transport into cells (B) Enzymes (C) Inter cellular ground substance

(D) Hormone (E) Taste receptor

A) I(A) II (B) III(D) IV(C) V(E)

B) I(B) II (A) III(D) IV(C) V(E)

C) I(B) II (E) III(D) IV(A) V(C)

D) I(A) II (D) III(C) IV(B) V(E)

137. Q.Id: 193468

Pick up the mismatched pair.

A) Replacing bones - Limb bones

B) Investing bones - Girdles

C) Sesamoid bones - Patella

D) Visceral bones - Os penis

138. Q.Id: 193467

Match the following

List1	List2
A. Dermal bones	1. Girdles
B. Replacing bones	2. Pisiform bone
C. Visceral bones	3. Cranium
D. Sesmold bones	4. Os corids
E. -	5. Osteon

A) A-> 2; B-> 1; C-> 3; D-> 4

B) A-> 3; B-> 1; C-> 4; D-> 2

C) A-> 3; B-> 1; C-> 2; D-> 4

D) A-> 2; B-> 4; C-> 1; D-> 3

139. Q.Id: 193466

Identify the chemical components of nucleic acid

(A) Cysteine

(B) Heterocyclic compound

(C) Tyrosine

(D) Phosphoric acid

(E) Ribulose

(F) Monosaccharide

A) A,B,E,F

B) A,B,D

C) B,D,F

D) A,C,D,F

140. Q.Id: 193465

Fill up the blanks with suitable words respectively.

Each chromosome has a ___ Or ___on the sides, disc shaped ____structure is called____The____chromosome has two equal chromosome has one arms,____shorter and one long arm. chromosome has no second arm. The secondary constriction develop small fragment called_____

(A) metacentric (B) telocentric(C) centromere (D) primary constriction

(E) submetacentric (F) satellite (G) kinetochore

A) A.C.B.D.G.E.F

B) D.C.G.A.E.B.F

C) B.A.C.D.G.E.F

D) B.A.D.G.C.E.F 17.

141. Q.Id: 193464

Pick up the incorrect statement about neuroglia

A) Ependymal cells are ciliated

B) Astrocytes are phagocytic cells

C) Oligodendrocytes from the myelin sheath

D) Satellite cells surround the cell bodies in gagglia

142. Q.Id: 193463

Assertion (A): In vacuole, the concentration of ions and other material will be less than the cytoplasm.

Reason (R): Tonoplast facilitates the transport of ions and other material against concentration to the vacuole. The correct option among the following

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of

C) A is true, but R is false

D) A is false, but R is true 16. Fill up the blanks with suitable words respectively.

143. Q.Id: 193462

Statement I : Sacred groves are examples for on - site conservation.
Statement II : Gene banks are examples for in - situ conservation.

A) Both statement I and II are true
B) Both statement I and II are false
C) Statement I is true. But statement II is false
D) Statement I is false. But statement II is true

144. Q.Id: 193461

Choose the number of modifications in Allium cepa. Tunicated bulb; Reduced stem; adventitious roots; umbel inflorescence; solid leaves; fleshy leaf bases; involucre of bracts

A) 4
B) 5
C) 6
D) 7

145. Q.Id: 193460

The animals in which cleavages are radial and indeterminate and possess enterocoelom are generally

A) Protostomes
B) Deuterostomes
C) Diploblastic animals
D) Radially symmetrical

146. Q.Id: 193459

Choose the correct statement regarding characters of Arachis.

A) Gamosepalous, geocarpic, indehiscent fruit, diadelphous stamen
B) Geocarpic, indehiscent fruit,monodelphous stamens
C) Sepals valvate estivation, protandrous,indehiscent fruit
D) Seeds store protein and oil,endospermic

147. Q.Id: 193458

Assertion (A) : Species is an ecological unit.
Reason (R) : Species havesimilar structure and functional characteristics.
The correct option among the following is

A) Both A and R are true and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanatkion of A
C) A is true, but R is false
D) A is false, but R is true

148. Q.Id: 193457

Match the following lists

List1	List2
A. Animals attracted to flowers by	I. Ophiophily
B. Beetles flies are attractedby	II. Safe space to lay eggs by insects
C. Pollination by squirrels	III. Colours
D. Pollination by snakes	IV. Foul odours
E. Amorphophallus	V. Therophily

A) A->(V), B->(II),C->(I),D->(III),E->(IV)

B) A->(V), B->(II),C->(III),D->(IV), E->(I)

C) A->(III), B->(IV),C->(V),D->(I), E->(II)

D) A->(III), B->(II),C->(I),D->(IV), E->(v)

149. Q.Id: 193456

Assertion (A): **In some plants the generative cell divides and forms the two male gamets during pollen tube growth in stigma.**

Reason (R): **In plants, which shed pollen in three cell stage, the pollen tube will have two male gamets from the beginning.**

The correction option among the following is

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

150. Q.Id: 193455

Choose the correct statements from the following.

(A) Meiosis has to occur if a diploid body has to produce gamets

(B) In Cladophora it is not possible to categorize the male and female gamets

(C) Organisms exhibiting external fertilization show greater synchrony between sexes

(D) In Wolfia isogamets can be seen

A) B.C.D

B) A,B,C

C) A,B,D

D) A.C,D

151. Q.Id: 193454

Identify the formation of the prop toots, stilt roots and pneumatophores respectively.

(A) Vertically growing upwards

(B) Roots coming out of the lower nodes of the stem

(C) Roots developing into vascular tissue of the host

(D) Hanging roots from the branches

(E) Roots that help in absorption of moisture

A) A,B,C

B) B,C,D

C) D.B.A

D) D,B.E →

152. Q.Id: 193453

Identify the plants by their characters respectively.

(i) Axillary buds as tendril, inferior ovary, mesocarp edible

(ii) A lateral branch of one internodal length, swollen petiole

(iii) Funnel shaped corolla, dehiscent fruit

(iv) Basal placentation condensed peduncle

(A) Helianthus

(B) Eichhornia

(C) Cucumber

(D) Datura

(A) (B) (C) (D)

A) i iii ii iv

B) iii ii i iv

C) i ii iii iv

D) iv ii i iii

153. Q.Id: 193452

Assertion (A): **Some plants growing in** N_2 **rich soils can obtain their nitrogen from insects.**

Reason (R): **Bacteria inhabiting the root system of Fabaceae plants can fix atmosphere nitrogen.**

The correct option among the following is

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

154. Q.Id: 193451

Find the correct statements among the following.

(A) For classification of higher organisms we need to know technical terms and, variation of the parts

(B) Roots arise from radicle are called fibrous roots

(C) The modified bract is called "Spathe"

(D) In Apiaceae family, each flower is surrounded by involucre of bracts

A) A.B

B) A.C

C) B.C

D) B.D

155. Q.Id: 193450

Arrange the following plants with their respective classes in the same order.

Sphenopsida, Psilopsida, Pteropsida, Lycopsida, Gnetopsida

(A) Selaginella (B) Equisitum (C) Sphagnum (D) Adiantum (E) Psilotum

(F) Gnetum

A) B,C,D,C,A,E

B) B,E,D,A,F

C) A,C,D,B,F,D

D) F,C,B,C,A,

156. Q.Id: 193447

Based on the following characteristics of life cycles, identify and arrange the plants respectively.

(A) Haplontic

(B) Diplo-haplontic

(C) Haplo-diplantic

(D) Diplobiontic

(E) Diplontic

(i) Laminaria (ii) Volvox

(iii) polysiphonia (iv) salvinia

(v) Fuccs

(A) (B) (C) (D) (E)

A) i iii iv v ii

B) ii iv i iii v

C) ii i iv iii v

D) v i iii ii iv

157. Q.Id: 193446

Assertion (A) :Socrates, Plato and Aristotle were responsible for the development of Botany into a science. Reason (R): They are regarded as Father of Botany. The correct option among the following is

A) Both A and R are true and R is the correct explanation of A

B) Both A and R are true, but R is not the correct explanation of A

C) A is true, but R is false

D) A is false, but R is true

158. Q.Id: 193444

Which among the following do not form asexual spores usually?

A) Deuteromycetes

B) Basidiomycetes

C) Ascomycetes

D) Phycomycetes Assertion

159. Q.Id: 193443

Identify the wrong statement among the following.

A) All living organisms of present past and future are linked to one another

B) Cellular organelle'sproperties are dissimilar due to the interaction of molecular components

C) Organisational complexity will be lower in hierarchy of the organisms

D) All organisms have consciousness

160. Q.Id: 192843

Features of sparged stirred tank bioreactor that differ from simple stirred bioreactors

(I) More bubble formation

(II) Decrease the surface area for O_2 transfer

(III) It has foam control system

A) I and II only

B) II and III only

C) I and III only

D) I, II and III