Previous Paper Questions

1. Q.Id: 166056

   Study the following lists

List1	List2
A. Bamboo	I. After 10 - 30 years
B. Agave	II. Within one year
C. Wheeat	III. Once in 12 years
D. Neelakuranji	IV. After 50 - 100 years
E. .	V. On every day

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

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

2. Q.Id: 156586

   In a 4-atom unit cell, where all positions are occupied by A atoms, the body centred octahedral hole is occupied by B atoms of appropriate size. The void space per unit volume of such unit cell in percentage is____

   A) 26%   **B)** 20%

   C) 31%   **D)** 28%

3. Q.Id: 156584

   The correct IUPAC name for $CH_2 = CHCH_2NHCH_3$ is

   A) allyl methylamine   **B)** 2-amino-4-pentene

   C) 4-amino pent-1-ene   **D)** N-methyl prop-2-en-1-amine

4. Q.Id: 156581

   In which of the following processes, entropy of the system increases?
   I - Temperature of a crystalline solid is raised from 0 K to 115 K
   II - Liquid crystallizing to solid
   III - $2NaHCO_{3(s)} \rightarrow Na_2CO_{3(s)} + CO_{2(g)} + H_2O_{(g)}$
   IV - Vaporization of a liquid

   A) II,III & IV   **B)** I,II & III

   C) I,II & IV   **D)** I,III & IV

5. Q.Id: 156579

A first order reaction completed 90% in 90 minutes. Hence, time required to complete 50% of the reaction is approximately_____minutes

A) 50

B) 54

C) 62

D) 27

6. Q.Id: 156576

Which among the following arrangements is correct?

A) $F_2 > Cl_2 > Br_2 > I_2$ (Electron Gain Enthalpy)

B) $F > N > O > C$ (Ionization Enthalpy)

C) $C > B > Be > Li$ (Atomic Size)

D) $F_2 > Cl_2 > Br_2 > I_2$ (Bond Dissociation Enthalpy)

7. Q.Id: 156574

Which among the following is incorrect about photochemical smog?

A. Occurs in cool and humid climate

B. Contains mixture of nitrogen oxides, volatile organic compounds like PAN, Acrolein, etc.

C. It is also called Los Angeles smog

D. It is oxidizing in nature and hence called oxidizing smog

A) A

B) B

C) C

D) D

8. Q.Id: 156573

The correct decreasing order of stabilities of +3 oxidation state of group-13 elements is

A) $B^{3+} > Al^{3+} > Ga^{3+} > In^{3+} > Tl^{3+}$

B) $Al^{3+} > Ga^{3+} > In^{3+} > Tl^{3+} > B^{3+}$

C) $Tl^{3+} > In^{3+} > Ga^{3+} > Al^{3+} > B^{3+}$

D) $Al^{3+} > B^{3+} > Ga^{3+} > In^{3+} > Tl^{3+}$

9. Q.Id: 156570

How unit cells of KBr are present in 1 mm^3 of grains of KBr. KBr grows in a NaCl type crystal and has density of 3 g/cm^3. Molecular weight of KBr = 119 g/mol many

A) 3.8×10^{18}

B) 2.6×10^{19}

C) 4.5×10^{20}

D) 2.0×10^{21}

10. Q.Id: 156567

Which of the following order of energies of molecular orbitals is correct for N_2?

A) $\left(\pi 2p_y\right) < \left(\sigma 2p_z\right) < \left(\pi^* 2p_x\right) \approx \left(\pi^* 2p_y\right)$

B) $\left(\pi 2p_y\right) > \left(\sigma 2p_z\right) > \left(\pi^* 2p_x\right) \approx \left(\pi^* 2p_y\right)$

C) $\left(\pi 2p_y\right) < \left(\sigma 2p_z\right) > \left(\pi^* 2p_x\right) \approx \left(\pi^* 2p_y\right)$

D) $\left(\pi 2p_y\right) > \left(\sigma 2p_z\right) < \left(\pi^* 2p_x\right) \approx \left(\pi^* 2p_y\right)$

11. Q.Id: 156566

Formic acid and acetic acid can be distinguished by which of the following?

A) Iodine and alkali

B) Tollens reagent

C) $NaHCO_3$ solution

D) Can't differentiate using any known reagent

12. Q.Id: 156565

Assertion: The majority of noble gas compounds are those of xenon (Xe)

Reason: Xenon has lowest ionization enthalpy and can be easily oxidized by oxidizing agents like oxygen and fluorine

A) Assertion and reason are correct, and reason is the correct explanation of assertion.

B) Assertion and reason are correct. and reason is not the correct explanation of assertion

C) Assertion is correct, reason is wrong

D) Assertion is correct, reason is correct

13. Q.Id: 156564

How many moles of I_2 are liberated when 1 mole of $K_2Cr_2O_7$ reacts with KI in an acidic medium?

A) 1

B) 2

C) 3

D) 4

14. Q.Id: 156563

An example for homogeneous system is

A) Cod liver oil

B) Vanishing cream

C) Sugar solution

D) Muddy water

15. Q.Id: 156562

Arrange the following isomers of C_6H_{12}, in increasing order of their boiling points.

I) 2,3-dimethyl butane

II) 3-methyl pentane

III) n-hexane

A) I < II < III
B) III < II < I

C) I < III < II
D) II < I < III

16. Q.Id: 156559

If the pH of a mono basic acid is 2.0 at 25 °C, the osmotic pressure of its 0.1 M solution will nearly be equal to_____

A) 3.5 atm
B) 4.7 atm

C) 2.6 atm
D) 1.8 atm

17. Q.Id: 156549

0.35 g of an organic compound in Duma's estimation for nitrogen gave 55 ml of nitrogen at 300 K and 715 mm pressure. If aqueous tension at 300 K is 15mm of Hg pressure. the percentage of nitrogen in the compound is

A) 15.50
B) 18.60

C) 16.46
D) 17.23

18. Q.Id: 156548

Under which of the following conditions, a gas deviates most from ideal behaviour?

A) Low pressure, Low temperature
B) High pressure. High temperature

C) Low temperature. high pressure
D) High temperature low pressure

19. Q.Id: 156530

If the solubility of a M_2S salt is 3.6×10^{-5} find its solubility product.

A) 1.72×10^{-6}
B) 1.86×10^{-17}

C) 1.86×10^{-13}
D) 1.72×10^{-13}

20. Q.Id: 156529

Predict the correct order of metallic character among the following

A) Cu > Ag > Au > Rg
B) Rg > Au > Ag > Cu

C) Au > Ag > Cu > Rg
D) Rg > Cu > Au > Ag

21. Q.Id: 156528

For a reaction not involving any gases, the rate of reaction does not depend upon _____

A) Pressure

B) Temperature

C) Concentration

D) Catalyst

22. Q.Id: 156527

Find the product of the following reaction.

+ D_2O $\longrightarrow$?
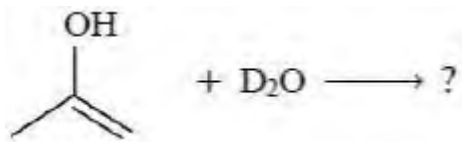
A)

B)

C)

D)

23. Q.Id: 156524

The shape of XeF_4 molecule is based on the fact that it has _____

A) 4 bond pairs

B) 4 bond pairs and 1 lone pair

C) 4 bond pairs and 2 lone pairs

D) 4 bond pairs and 4 lone pairs

24. Q.Id: 156523

Which of the following is true about empirical formula and molecular formula?

A. Both are same

B. Empirical formula tells about percentage of various elements in a compound

C. Molar mass can be determined from empirical formula

D. We can't determine molar mass using molecular formula

A) A

B) B

C) C

D) D

25. Q.Id: 156521

Which among the following monomeric units undergoes anionic polymerization in the presence of RLi?

A) $CH_2 = CHCH_3$

B) $CH_2 = CHC_6H_5$

C) $CH_2 = CH-O-CH_2-CH_3$

D) $CH_2 = CHC_6H_{11}$

26. Q.Id: 156520

How many geometrical isomers can be written to $\left[CO(NO_2)_3\,(NH_3)_3\right]$?

A) 2

B) 0

C) 3

D) 4

27. Q.Id: 156519

What is the hybridization of carbon in graphite?

A) sp

B) sp^3

C) sp^2

D) dsp^2

28. Q.Id: 156517

$MgSO_4$ is soluble in water because

A) Hydration energy is higher than lattice energy

B) Lattice energy is higher than hydration energy

C) Lattice energy is equal to hydration energy

D) Mg^{2+} and SO_4^{2-} Ions have comparable size

29. Q.Id: 156516

When 50 ml 0.1M HCl is added to 50 ml of 0.01 M KOH, the pH of the resulting solution will be_____

A) 7

B) 0

C) 5.35

D) 1.35

30. Q.Id: 156515

Find the equilibrium constant for the formation of NO_2 from NO and O_2 at 298 K as per the reaction given below. Given $\Delta_f G°(NO_2) = 52\,kJ.\,mol^{-1} \Delta_f G°(NO) = 87\,kJ.\,mol^{-1}, \Delta_f G°(O_2) = 0\,kJ.mol^{-1}$ **(Antilog of 0.122 = 1.3210)**

A) 1.32×10^6

B) 1.32×10^5

C) 1.32×10^4

D) 1.32×10^3

31. Q.Id: 156513

Which of the following represents the structure of the principal product in the given reaction?

A)

B)

C)

D)
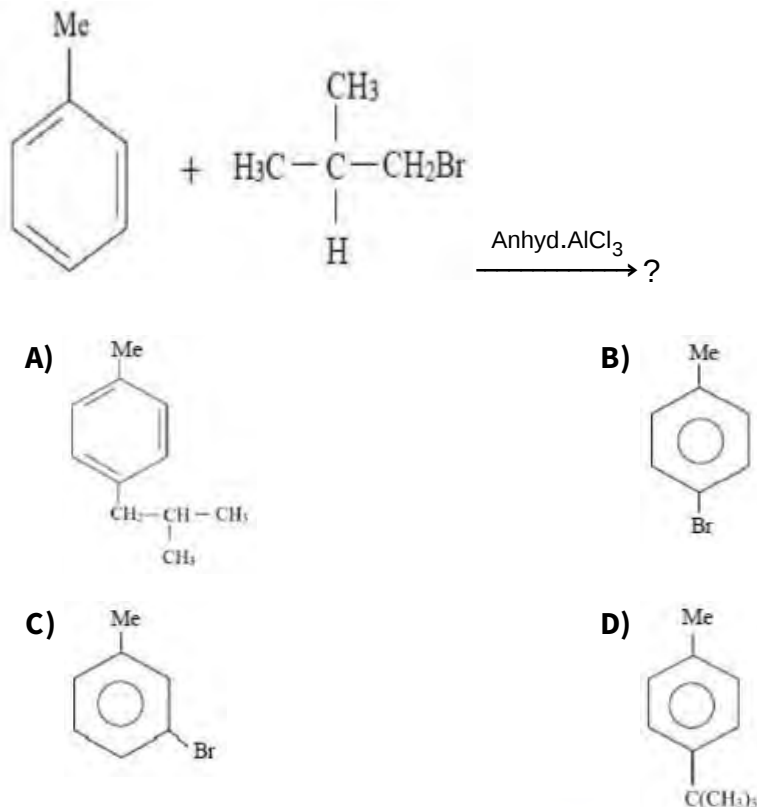
32. Q.Id: 156511

If the work function for Caesium (Cs) atom is 1.9 eV. then find the approximate value of its threshold wavelength

A) 723 nm

B) 480 nm

C) 654 nm

D) 525 nm

33. Q.Id: 156510

In the ideal gas equation, PV = nRT, the value of the universal gas constant would depend only on_____

A) The nature of the gas

B) The pressure of the gas

C) The units of the measurement

D) None of these answers are correct

34. Q.Id: 156509

Which of the following situations occur when ferric chloride is added to excess hot water?

A) A negatively charged sol is formed

B) A positively charged sol of hydrated ferric oxide is formed

C) There is no charge on the colloidal particles

D) Adsorption of OH^- from water occurs

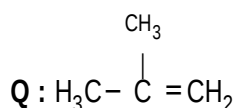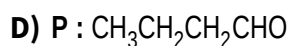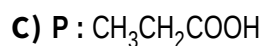35. Q.Id: 156507
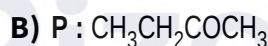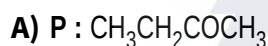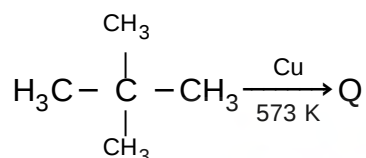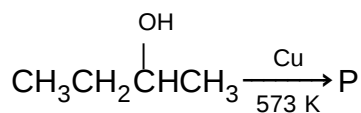
At constant pressure and temperature, the rates of diffusion of N,0 and CO2 gases are related as which among the following?

A) They have same rates of diffusion

B) CO_2 diffuses faster than NO_2

C) NO_2, diffuses faster than CO_2

D) Cannot be predicted

36. Q.Id: 156506

Orlon is a polymer of which monomer?

A) Styrene

B) Vinyl chloride

C) Acrylonitrile

D) Butadiene and adipic acid

37. Q.Id: 156504

The products P and Q of the following reactions, respectively are:

$$CH_3CH_2\overset{\overset{\displaystyle OH}{|}}{C}HCH_3 \xrightarrow[573\ K]{Cu} P$$

$$H_3C-\overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}}-CH_3 \xrightarrow[573\ K]{Cu} Q$$

A) P : $CH_3CH_2COCH_3$

Q : $H_3C-\overset{\overset{\displaystyle CH_3}{|}}{C}=CH_3$

B) P : $CH_3CH_2COCH_3$

Q : $H_3C-\overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle H}{|}}{C}}-CHO$

C) P : CH_3CH_2COOH

Q : $H_3C-\overset{\overset{\displaystyle CH_3}{|}}{C}=CH_2$

D) P : $CH_3CH_2CH_2CHO$

Q : $H_3C-\overset{\overset{\displaystyle CH_2}{||}}{C}-CHO$
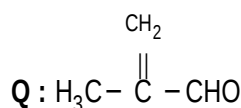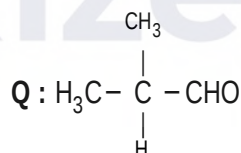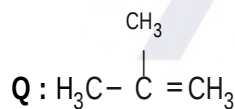
38. Q.Id: 156498

For a reaction A $\to$ products, the value of equilibrium constant 'K', when the reaction reaches completion, would be close to which among the following?

A) 10^3

B) 1

C) 10

D) 10^{-2}

39. Q.Id: 156495

How many of the following species have formal oxidation state of N or P as '+5' $N_2O_5, NO_3^-, NO_2^-, [PO_4]^{3-}, P_4O_6, P_4O_{10}, H_3PO_3$

A) 2

B) 3

C) 4

D) 5

40. Q.Id: 156492

Nuclear charge increases with increase in_____

A) Ionization enthalpy

B) Atomie number

C) Atomic size

D) Atomic radii

41. Q.Id: 156489

Calculate the molarity of HCl liquid, given its density is 1.17 gm/cc
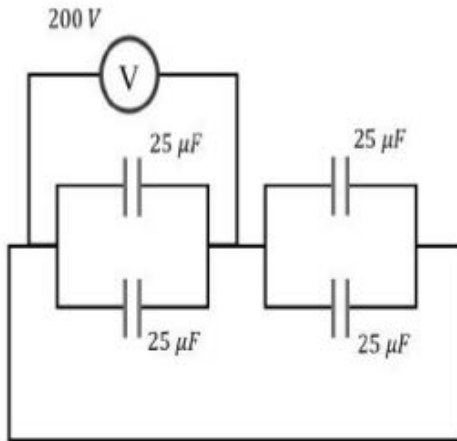
A) 42.10 M

B) 32.05 M

C) 36.50 M

D) 32.60 M

42. Q.Id: 156487

Find the time period of the body (mass m). shown in the figure, when displaced slightly in the vertical direction.
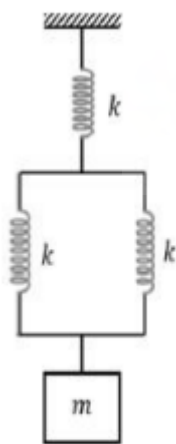
A) $2\pi\sqrt{\dfrac{m}{2k}}$

B) $2\pi\sqrt{\dfrac{3m}{k}}$

C) $2\pi\sqrt{\dfrac{3m}{2k}}$

D) $\pi\sqrt{\dfrac{3m}{k}}$

43. Q.Id: 156485

Four capacitors of 25 μF each are connected as shown in the figure below. If the D.C. voltmeter read 200 V. charge on each plate of the capacitor is____

A) 2×10^{-3}C

B) 5×10^{-3}C

C) 2×10^{-2}C

D) 5×10^{-2}C

44. Q.Id: 156484

The average energy per mole of an ideal gas of number of degrees of freedom equal to n at temperature T is_____

A) $\dfrac{RT}{2n}$

B) nRT

C) $\dfrac{2RT}{n}$

D) $\dfrac{nRT}{2}$

45. Q.Id: 156483

If the current gain of a common base circuit is 0.97. find the current gain of common emitter circuit.
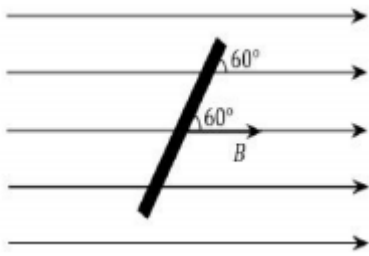
A) 32.3

B) 1.33

C) 100

D) 64.3

46. Q.Id: 156482

A rod of length 1 m is kept inclined at an angle of 60° with the uniform magnetic field of 0.5 T. If the rod is moved with a velocity 10 m.s^{-1} perpendicular to the field, the induced emf is

A) 10 V   **B)** 7.5 V

C) 4.33 V   **D)** 2.55 V

47. Q.Id: 156481

When a position dependent force F = 7-2x +3x^2 N acts on a small body of mass 2 kg and displaces it from x = 0 to x 5 m. calculate the work done. (in joules)

A) 70   **B)** 270

C) 35   **D)** 135

48. Q.Id: 156475

The fringe width in the interference pattern obtained on a screen kept at a distance of 1.2 m from the slits in a double slit experiment when light of wavelength 560 nm is used is 0.48 mm. Then find the separation between the slits.

A) 1.2 mm   **B)** 0.8 mm

C) 1.4 mm   **D)** 2 mm

49. Q.Id: 156474

Two fixed point charges +4q and +q units are separated by a distance of a. The distance, where the resultant electric field intensity is zero, measured from charge +4q is

A) $\dfrac{2a}{3}$ **B)** $\dfrac{a}{2}$

C) $\dfrac{3a}{2}$ **D)** $\dfrac{5a}{2}$

50. Q.Id: 156473

Three voltmeters all having different resistances are joined as shown. When some potential difference is applied across P and Q, their readings are V_1, V_2 and V_3 respectively. Then
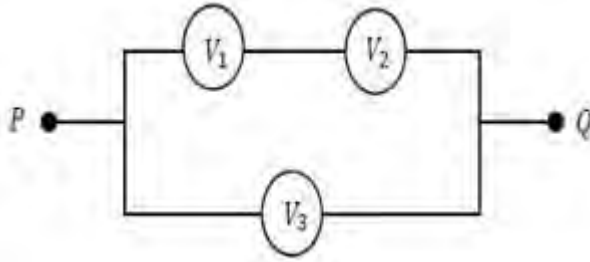
A) $V_1 = V_2$

B) $V_1 \neq V_2$

C) $V_1 + V_2 = V_3$

D) $V_1 + V_2 > V_3$

51. Q.Id: 156472

A copper rod is moved in a magnetic field. The charge developed across its ends will be proportional to_____

A) Magnetic flux

B) Rate of change of magnetic flux

C) (velocity of the rod)$^{-1}$

D) (magnitude of the magnetic field)$^{-1}$

52. Q.Id: 156471

Heating of water at atmospheric pressure is an_____

A) isothermal process

B) isobaric process

C) adiabatic process

D) isochoric process

53. Q.Id: 156470

When a simple pendulum is taken from equator to poles, its period____

A) increases

B) decreases

C) remains same

D) becomes zero

54. Q.Id: 156469

A ball is thrown vertically upwards. Which of the following graph represent v – t graph of the ball during its flight? (air resistance is neglected)

A)

B)

C)

D)
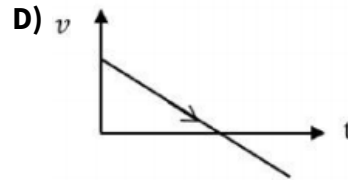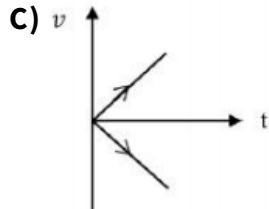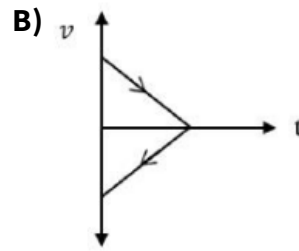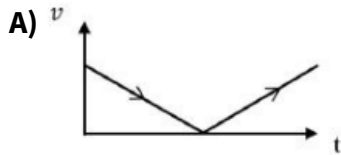
55. Q.Id: 156468

A copper rod of length 2.5 m and an iron rod of length 1.5 m having the same areas of cross section are connected in series. Thermal conductivities of copper and iron are respectively 400 and 80 SI units. The equivalent conductivity of the composite bar in SI unit is_____

A) 500

B) 160

C) 240

D) 120

56. Q.Id: 156467

In an LCR circuit, inductive reactance and capacitive reactance was found to be equal. The resistance was found to be 20 Ω. The probable impedance of the combination is

A) Zero

B) 20 Ω

C) $40\sqrt{2}\,\Omega$

D) 400 Ω

57. Q.Id: 156466

The radii of two spherical conductors A and B are im the ratio 3: 5. Conductor 'A' is in air while B is surrounded by a medium of relative permittivity 6. The ratio of the capacitances of A and B is_____

A) 1:10

B) 3:5

C) 18:5

D) 5:6

58. Q.Id: 156465

Two concentric coplanar circular loops of radii r_1 and r_2 cary currents i_1 and i_2 respectively, in opposite directions (i_1 clockwise and i_2 anticlockwise.) The magnetic induction at the centre of the loops is half of that due to i_1 alone at the centre. If $r_2 = 2r_1$, the value of $i_2/i_1 =$

A) 2

B) 0.5

C) 0.25

D) 1

59. Q.Id: 156464

Heat is passed through two cylindrical rods of same material. Their diameters and lengths are in the ratio 1: 2 and 2:1 respectively. If their ends are maintained at same temperature difference, the ratio of rate of flow of heat through them is_____

A) 1 : 1

B) 2 : 1

C) 1 : 4

D) 1 : 8

60. Q.Id: 156463

When distance between two-point charges is increased by 10%, the force of interaction

A) Increases by 10%

B) Decreases by 10%

C) Decreases by 17%

D) Decrees by 21%

61. Q.Id: 156462

With resistance P and Q in the left and the right gap respectively of a meter bridge, the null point divides the wire in the ratio 3 : 4. When P and Q are increased by 20Ω each. the null point divides the wire in the ratio 5: 6. Then the values of P. Q respectively are_____,_____

A) 30Ω,40Ω

B) 20Ω,40Ω

C) 30Ω,80Ω

D) 20Ω,20Ω

62. Q.Id: 156461

A uniform rope of length 12 m and mass 6 kg hangs vertically from a rigid support. A block of mass 2 kg is attached to the free end of the rope. A transverse pulse of wavelength 0.06 m is produced at the lower end of the rope. Wavelength of the pulse when it reaches the top of the rope is_____

A) 0.02 m

B) 0.12 m

C) 0.01 m

D) 0.03 m

63. Q.Id: 156460

A magnet of magnetic moment M is situated with its axis along the direction of a magnetic field of strength B. The work done in rotating it by an angle of 180° will be

A) -MB

B) +MB

C) 0

D) +2MB

64. Q.Id: 156459

The slope of curve obtained by plotting $\log_e(A)$ versus time(t), [Hear A is the activity of the sample] represents_____

A) Half life

B) Mean life

C) Decay constant

D) Initial number of atoms

65. Q.Id: 156458

The frequency of tuning fork is 500 Hz and the velocity of sound in air is 300 $m.s^{-1}$, The distance travelled by sound while the fork executes 100 oscillations per second is

A) 45 m

B) 60 m

C) 30 m

D) 50 m

66. Q.Id: 156457

A hydraulic lift can lift a maximum load of 3000 kg.wt. The area of cross section of the piston carrying the load is 4.25 x10^{-2} m². The maximum pressure the smaller piston would have to bear is____

A) $6.92 \times 10^5 N.m^{-2}$

B) $13.76 \times 10^2 N.m^{-2}$

C) $9.63 \times 10^6 N.m^{-2}$

D) $7.82 \times 10^4 N.m^{-2}$

67. Q.Id: 156456

The momentum of a particle is $\vec{P} = 2\hat{i}\cos t + 2\hat{j}\sin t$. What is the angle between the force $\vec{F}$ acting on the particle and the momentum $\vec{P}$?

A) 45^0

B) 90^0

C) 135^0

D) 180^0

68. Q.Id: 156455

Kinetic energy of a body increases_____times when its momentum is increased 'n' times.

A) n

B) 2n

C) $\sqrt{n}$

D) n^2

69.
Q.Id: 156454

What is the dimensional formula of universal gravitational constant(G)?

A) $M^{-1}L^3T^{-2}$

B) $M^{-2}L^3T^{-2}$

C) $M^{-1}L^2T^{-2}$

D) $M^{-1}L^3T^{-1}$

70.
Q.Id: 156449

Which of the following statements is correct?
1) Kinetic energy of a system can be changed without changing its momentum
2) Kinetic energy of a system cannot be changed without changing its momentum
3) Momentum of a system cannot be changed without changing its kinetic energy
4) Body cannot have energy without having momentum

A) 1

B) 2

C) 3

D) 4

71.
Q.Id: 156448

Frictional force increases when surfaces in contact are made very smooth. This is because

A) of molecular forces

B) of decrease in surface area

C) of decrease in irregularities

D) Increases in area

72.
Q.Id: 156447

Two Carnot's engines A and B have the same efficiency. A receives heat from a source at 800 K and rejects to a sink at 'x kelvin. B receives heat rejected by A and rejects to another sink at 300 K. The temperature x is nearly____

A) 200 K

B) 480 K

C) 350 K

D) 515 K

73.
Q.Id: 156446

If the radius of an atom is 1 $\overset{o}{A}$. the total volume of a mole of these atoms will be_____

A) $2.5 \times 10^{-6} m^3$

B) $2.5 \times 10^{-10} m^3$

C) $2.5 \times 10^{-8} m^3$

D) $2.5 \times 10^{-9} m^3$

74. Q.Id: 156444

The velocity of light in a medium is half its velocity in air. If ray of light emerges from such a medium into air, the angle of incidence, at which it will be totally internally reflected, is

A) 15^0

B) 30^0

C) 45^0

D) 60^0

75. Q.Id: 156443

When a light of wavelength 300 nm falls on a photoelectric emitter, photoelectrons are liberated. For another emitter, a light of wavelength 600 nm is sufficient for creating photoemission. What is the ratio of the work functions of the two emitters?

A) 1:2

B) 2:1

C) 4:1

D) 1:4

76. Q.Id: 156442

The velocity of a body moving with uniform acceleration at a given instant of time 't' is 10 m.s^{-1} Five seconds later its velocity is 20 m.s^{-1}. The distance travelled in that time is

A) 75 m

B) 150 m

C) 300 m

D) 500 m

77. Q.Id: 156441

A graph of pressure (P) against volume (V) of an ideal gas undergoing an isothermal process is :

A) a straight line passing through the origin

B) a parabola

C) a rectangular hyperbola

D) a straight line parallel to pressure axis

78. Q.Id: 156440

The internal energy of a gram-molecule of an ideal gas depends on_____

A) Pressure alone

B) Volume alone

C) Temperature alone

D) Both on pressure as well as on temperature

79. Q.Id: 156439

Under elastic limit, the stress is_____

A) Inversely proportional to strain

B) Directly proportional to strain

C) Square root of strain

D) Independent of strain

80. Q.Id: 156438

The electromagnetic radiations are in descending order of wavelengths in following sequence

A) Infrared waves, radio waves, x-rays, visible light rays

B) Radio waves, infrared waves, visible light rays. x-rays

C) Radio waves. visible light rays. infrared waves. x-rays

D) X-rays. visible light rays. infrared waves. radio waves

81. Q.Id: 156437

An electron makes a transition from outer orbit (n = 4) to the inner orbit (n = 2) of ahydrogen atom. The wave number of the emitted radiation is

A) $\dfrac{2R}{16}$

B) $\dfrac{3R}{16}$

C) $\dfrac{4R}{16}$

D) $\dfrac{5R}{16}$

82. Q.Id: 156429

Mandibles are present in the mouth parts of

A) Bed bug

B) House fly

C) Cockroach

D) Locust

83. Q.Id: 156428

Identify the incorrect statement about Limbic system
1) Amygdala and hippocampus are deep structures in the inner part of the cerebral hemispheres. These complex structures are called the limbic lobe or limbic system.
2) Limbic system along with the hypothalamus regulate sexual behavior.
3) It also regulates expression of emotional reactions such as excitement, pleasure fear and motivation
4) It also controls all voluntary and motor functions

A) 1

B) 2

C) 3

D) 4

84. Q.Id: 156427

Deficiency of vitamin C leads to_____

A) Carotenemia **B)** Kwashiorkor

C) Scurvy **D)** Rickets

85. Q.Id: 156426

Columns of Bertini in human kidney refers to

A) The cortex extends in between the medullary pyramids as renal columns

B) Division of medulla into a few conical masses projecting into the calyces (sing calyx).

C) cup-like structure in nephron

D) Cells in Juxta glomerular complex.

86. Q.Id: 156425

Which of the following statements regarding inbreeding are incorrect?
i. The inbreeding strategies allow the desirable qualities of two different breeds to be combined.
ii. It increases homozygosity.
iii. It also helps in elimination of less desirable genes.
iv. Continued inbreeding increases fertility and productivity

A) (ii) & (iv) **B)** (i) & (iv)

C) (iii) & (iv) **D)** (i) & (ii)

87. Q.Id: 156424

Match the following

List1	List2
A. An endothermic animal	I. Sea anemone
B. An ectothermic animal	II. Man
	III. Lizard
C. Organism of benthic zone	IV. Water snail
D. Periphyton	

A) A->iv, B->iii, C->i, D->ii **B)** A->ii, B->i, C->iii, D->iv

C) A->ii, B->iii, C->i, D->iv **D)** A->i, B->ii, C->iii, D->iv

88. Q.Id: 156423

Identify the correct statement(s) regarding the immunity of body:

a) In cell mediated immune system the body fights against the pathogens by producing antibodies

b) Short lived immunity found in infants through mother's placenta and breast milk is called natural passive immunity.

c) Structure of antibody was given by Porter & Edelman

d) Surface of antigen contains antibody binding site called epitope and antigen-binding site on antibody is called paratope.

e) IgA are common immunoglobins present in blood and pass through placenta

A) a,b and c

B) b,c and d

C) Only e

D) All statements are correct

89. Q.Id: 156414

Identify the wrongly matched gastro-intestinal tract hormone and its function

A) Gastrin-stimulates production of HCl and pepsinogen from gastric gland

B) Secretin-stimulates secretion of water and bicarbonate ions from liver

C) Cholecystokinin-contraction of gall bladder for secretion of bile juice

D) Gastric inhibitory peptide (GIP)-inhibits gastric juice secretion

90. Q.Id: 156413

Which of following is/are incorrect regarding differences between chordates and non-chordates ?

Chordates	Non-chordates
1. Notochord present	1. Notochord absent.
2. Central nervous system is Central. hollow end single	2. Central nervous system is dorsal, solid and double
3. Pharynx perforated by gill slits	1. Gill slits are absent
4. Heart is dorsal	4. heart is ventral (if present)
5. A post-anal part (tail) is absent	5. Post-anal tail is present

A) only 5

B) 1 and 4

C) 2,3 and 5

D) 2,4 and 5

91. Q.Id: 156411

Match the following

List1	List2
A. Menarche	I. First menstrual cycle
B. Menopause	II. Last menstrual cycle
C. Amenorrhoea	III. Absence of menses
D. Dysmenorrhoea	IV. Painful menses

A) A->ii, B->i, C->iii, D->iv   **B)** A->i, B->iii, C->ii, D->iv

C) A->i, B->ii, C->iii, D->iv   **D)** A->i, B->ii, C->iv, D->iii

92. Q.Id: 156410

There is no DNA in_____

A) A mature sperm   **B)** Mature RBC

C) Hair root   **D)** Kidney

93. Q.Id: 156409

One of the following statement is incorrect regarding the development of foetus by the end of 12 weeks (first trimester)

A) First movement of fetus and appearance of hairs observed   **B)** Heart is formed in the embryo

C) Most of organ system is formed (limbs and external genitalia are well developed).   **D)** Fetus develops limbs and digits

94. Q.Id: 156405

Hydrological cycle is controlled by _____

A) Forests   **B)** Grass Land

C) Planktons   **D)** Epiphytes

95. Q.Id: 156404

Statement 1 : In the vertebrates, the notochord is replaced by vertebral column but in protochordates the notochord remains as it is.

Statement 2 : All vertebrates are chordates but all chordates are not vertebrates

A) Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.

B) Both statements 1 and 2 are correct but statement 2 is the correct explanation of statement 1.

C) Statement 1 is correct and statement 2 is incorrect

D) Both statements 1 and 2 are incorrect

96. Q.Id: 156400

The hyoid bone is the only bone that _____

A) Protects the elbow

B) Is vestigial and serves no purpose in the body

C) Forms the tailbone

D) Does not articulate with any other bone

97. Q.Id: 156398

In human females, meiosis-II is not completed until _____

A) Puberty

B) Birth

C) Uterine Implantation

D) Fertilization

98. Q.Id: 156363

A flat area that runs through axis is _____

A) Symmetry

B) Plane

C) Cavity

D) None

99. Q.Id: 156362

Phylum cnidaria is also known as

A) Flat worms

B) Coelenterate

C) Porifera

D) Ctenophora

100. Q.Id: 156361

A woman with albinic father marries an albinic man, the proportion of her progeny is

A) 2 normal : 1 albinic

B) All normal

C) All albinic

D) 1 normal : 1 albinic

101. Q.Id: 156360
Holandric genes are present on_____

A) Autosomes

B) Y - chromosomes

C) X - chromosomes

D) Autosomes and sex chromosomes

102. Q.Id: 156359
Haversian canals are found in bone, doesn't have which of the following characters

A) Haversian canals are found in bone matrix of long bone likehumerus of mammals

B) Haversian canal, its lamellae and osteocytes form a haversian system

C) Volkman's canal connect and communicate haversian canals

D) Also called osteon and found only in vertebrates such as fishes and amphibians

103. Q.Id: 156358
The yellow colour of urine of vertebrate is due to _____

A) Uric acid

B) Keratin

C) Urochrome

D) Bilirubin

104. Q.Id: 156357
Study the following statements and select the incorrect ones.
i) 'Bt' in 'Bt cotton' indicates that it is a nongenetically modified crop produced through biotechnology.
ii) The anticoagulant 'hirudin' is being produced from transgenic Brassica napus seeds.
iii) 'Flavrsavr' transgenic tomatoes remain fresh for a longer period than the normal tomato variety.
iv) Golden rice is a transgenic variety of Oryza sativa, which is rich in β-carotene and helps to prevent colour blindness.

A) (i) and (ii) only

B) (i) and (iv) only

C) (i) and (iii) only

D) (i) (ii) (iii) and (iv)

105. Q.Id: 156356

Which of the following statement(s) are correct regarding fission in Euglena?

a) Nucleus undergoes meiosis.

b) Gullet and stigma duplicate but flagella do not.

c) Exhibit transverse fission.

d) During fission V-shaped cleavage forms in the posterior of the cell and gradually splits the entire cell into 2.

A) Only a is correct

B) a,b and d

C) Only d

D) None of the statements are correct

106. Q.Id: 156355

Which one of the following mendelian traits is present on the 5th Chromosome ?

A) Pod colour

B) Pod shape

C) Pod position

D) Flower colour

107. Q.Id: 156354

Which of the following is/are correctly matched?

1) Statocysts-Organ of balancing in Arthropods

2) Radula-Rasping organ for feeding in mollusca

3) Choanocytes-Collar cells in cnidaria

4) Proboscis gland-Excretory organ in hemichordate

A) Only 1 and 2 are correct

B) Only 1,2 and 3 are correct

C) Only 3 is correct

D) Only 1,2 and 4 are correct

108. Q.Id: 156353

Rachel carson's famous book ''silent spring'' is related to _____

A) Population

B) Pollution

C) Ecosystem

D) Community

109. Q.Id: 156352

If most individuals in a population are young, why is the population likely to grow rapidly in the future?

A) Many individuals will begin to reproduce soon

B) Death rates will be low

C) Immigration and emigration can be ignored

D) All of these options are correct

110. Q.Id: 156351
Choose the correct statement regarding filariasis.
 1) Third-stage infective nematode larvae enter the mosquito gut when the mosquito bites infected man.
 2) Nematode larvae mature into the thread like adult worms in human gut
 3) Adults worms produce microfilariae have diurnal periodicity
 4) A mosquito ingests the microfilariae during a blood meal

A) 1   B) 2

C) 3   D) 4

111. Q.Id: 156350
Nuclear membrane is absent in _____

A) Volvox   B) Nostoc

C) Agaricus   D) Penicillium

112. Q.Id: 156349
Taxonomic hierarchy like kingdom, class order,genus and species were introduced by____(1)____Taxon phylum was introduced by ____(2)____

A) 1-Haeckel 2-Carolus Linnaeus   B) 1-Cuvier, 2-Haeckel

C) 1-Cuvier, 2-Carolus Linnaeus   D) 1-Carolus Linnaeus 2-Carl woese

113. Q.Id: 156348
Identify the type of bone with proper example

A) Cartilage bone - Bones of limbs, girdle and vertebrae   B) Sesamoid bone - Ulna

C) Investing bone - cranium   D) Visceral bone - Ribs

114. Q.Id: 156347
A prolonged constipation may cause_____

A) Dysentery   B) Ulcers

C) Hemorrhoids   D) Cholera

115. Q.Id: 156346

Identify the incorrect statement among the following

1) Forelimbs in mammals such as bat, cheetah, whale and man is an example of adaptive divergence

2) Malthus stated that the population does not grow exponentially because of limited resources

3) Hugo deVries stated that evolution is a directional process

4) Organism with shorter life span evolve faster than the organism with longer life span

A) 1

B) 2

C) 3

D) 4

116. Q.Id: 156345

According to most conservation biologists, the single greatest threat to global biodiversity is

A) Insufficient recycling programs for non renewable resources.

B) Global climate change resulting from a variety of human activities.

C) Stratospheric ozone depletion.

D) Alteration or destruction of the physical habitat.

117. Q.Id: 156344

Which of the following statements is incorrect?

1) Neuroplasm of neuron contains myelin sheath,neurofibrils and schwan cells

2) Cyton of neuron contains smaller branches called dendrites; these conduct impulses away from the cyton

3) Myelin sheath is not continuous. It is interrupted by gaps called nodes of Ranvier.

4) A long branch that arises from cyton is called axon which carry impulses towards the cyton

A) 1

B) 2

C) 3

D) 4

118. Q.Id: 156343

A free-living round worm is_____

A) Enterobius

B) Trichinella

C) Rhabditis

D) Dracunculus

119. Q.Id: 156342

Regarding ecological food chain, man is a_____

A) Producer

B) Consumer

C) Decomposes

D) None of these options are true

120. Q.Id: 156341

Which among the following four statements are incorrect?

1) Fructose is generally absorbed by simple diffusion

2) The digestive wastes, solidified into coherent feces in the rectum initiate an endocrinal action causing an urge or desire for its removal

3) The food mixes thoroughly with the acidic gastric juice of the stomach by the churning movements of its muscular wall and is called the chyme

4) The secretions of the brush border cells of the mucosa along with the secretions of the goblet cells constitute the Succus entericus

A) (1) & (2)

B) (2) & (3)

C) (3) & (4)

D) (1) & (3)

121. Q.Id: 156340

Identify the wrong matching related to cockroach

A) Sound receptors - Anal cerci

B) Development - Paurometabolous

C) Spermatheca - present in the 8th segment of males

D) Oothecae - 14 - 16 eggs.

122. Q.Id: 156339

Endomembrane system doesn't include which of the following?

A) Endoplasmic Reticulum

B) Golgi complex

C) Lysosome

D) Mitochondria

123. Q.Id: 156338

In a girdled plant, the position of the bark above the ring on the stem becomes swollen because of

A) Absence of Xylem

B) Absence of Phloem

C) Absence of Bark

D) Absence of Pith

124. Q.Id: 156337
The development of an embryo from an unfertilized female gamete is know as

A) Parthenocarpy   **B)** Parthenogenesis

C) Apomixis   **D)** Polyembryony

125. Q.Id: 156336
The millennium ecosytem assessment grouped ecosystem services. Choose the correct categories

A) Learning, Provisioning, Regulating, Cultural   **B)** Supporting, Provisioning, Regulating, Cultural

C) Extracting, Regulating, Cultural, Learning   **D)** Extracting, Supporting, Cultural, Learning

126. Q.Id: 156301
The spathe in Musa is a modified

A) Petioles   **B)** Bract

C) Bracteoles   **D)** Leaves

127. Q.Id: 156300
Multiple epidermis on dorsal and ventral side of the leaf is found in _ _ _ _ _

A) Nerium   **B)** Zea mays

C) Ficus Bengalensis   **D)** Mangifera indica

128. Q.Id: 156299
Which one of the following possess ovule without integuments?

A) Helianthus   **B)** Loranthus

C) Maize   **D)** Datura

129. Q.Id: 156298
The pressure exerted by the cytoplasm against the cell wall is

A) Root pressure   **B)** pressure potential

C) Imbibition   **D)** Turgor pressure

130. Q.Id: 156297
Temin worked on which virus ?

A) Rhino virus   **B)** Dengue virus

C) Herpes virus   **D)** Retro virus

131. Q.Id: 156296

Fertilization in angiosperm is _____

A) Oogamy

B) Isogamy

C) Anisogamy

D) Siphonogamous oogamy

132. Q.Id: 156295

The use of which one of the following bacteria has led to probiotics ?

A) Acetobacter

B) Lactic acid Bacillus

C) Propionibacterium

D) Clostridium

133. Q.Id: 156294

First transgenic cow with human alpha-lactalbumin gene is

A) Hinny

B) Mule

C) Dolly

D) Rosie

134. Q.Id: 156293

Which of the following is not an advantage of selecting Drosophila for genetic studies?

A) Indistinguishable

B) Shorter life cycle

C) Grown on synthetic medium

D) Produce large number of progenies

135. Q.Id: 156292

Match the following

List1	List2
A. Z - Gene	I. Inducer
B. Y - Gene	II. Galactosidase
C. a - Gene	III. Permease
D. Lactose	IV. Transacetylase

A) A->i, B->iii, C->iv, D->ii

B) A->ii, B->iv, C->iii, D->i

C) A->ii, B->iii, C->iv, D->i

D) A->ii, B->iii, C->i, D->iv

136. Q.Id: 156291

Choose the incorrect pair of applications with methods

A) ELISA- detection of antibodies

B) PCR- mutation in genes

C) DNA fingerprinting — Forensic sciences

D) Gene therapy — Parentage disputes

137. Q.Id: 156290

Select the neutral amino acid among the following.

A) Lysine

B) Glutamic acid

C) Valine

D) Phenylalanine

138. Q.Id: 156289

A horizontal underground stem is_____

A) Corm

B) Phylloclade

C) Rhizome

D) Rhizoid

139. Q.Id: 156288

In which pair both the plants can be vegetatively propagated by leaf pieces?

A) Agave and kalanchoe

B) Bryophyllum and kalanchoe

C) Chrysanthemum and Agave

D) Asparagus and Bryophyllum

140. Q.Id: 156287

Match the following

List1	List2
A. Chlorophyll-a	I. Yellow-Orange
B. Chlorophyll-b	II. Yellow
C. Xanthophylls	III. Blue green
D. Carotenoids	IV. Yellow green

A) A->iv, B->iii, C->ii, D->i

B) A->i, B->ii, C->iii, D->iv

C) A->iii, B->iv, C->ii, D->i

D) A->ii, B->i, C->iii, D->iv

141. Q.Id: 156286
Phloem sap is mainly _____

A) Glucose and water
B) Hormones and amino acids
C) Water and sucrose
D) Amino acids and water

142. Q.Id: 156285
Enzymes, which help in electron transfer are_____

A) Cytochromes
B) Proteases
C) Isomerases
D) Nucleases

143. Q.Id: 156284
In which step in TCA cycle, substrate level phosphorylation occurs?

A) Conversion of isocitric acid to oxalo succinic acid
B) Conversion of α-ketoglutaric acid to succinyl COA
C) Conversion of succinyl COA to Succinic acid
D) Conversion of succinic acid to fumaric acid

144. Q.Id: 156283
Which of the following is wrongly matched?

A) Sugarcane- Kranz anatomy
B) Blackman- Law of limiting factors
C) PSI−P_{700}
D) PEP Carboxylase- Bundle Sheath of C_4 plants

145. Q.Id: 156282
Age of the tree can be calculated from _____

A) Annual rings
B) Phloem
C) Pith
D) Xylem

146. Q.Id: 156281
Homogamous species is _____

A) Funaria
B) Cladophora
C) Pteris
D) Cycas

147. Q.Id: 156280
Major structural components of cell membrane are _____

A) Fats
B) Oils
C) Steroids
D) Phospholipids

148. Q.Id: 156279

Engler and prantl published a phylogenetic system in the monograph

A) Die Naturlichen
planzenfalmilien

B) Histroria plantarum

C) Species plantarum

D) Genera plantarum

149. Q.Id: 156278

Match the following

List1	List2
A. E coil	I. 5386 bP
B. Human	II. 48502 bP
C. $\phi \times 174$	III. 4.6×10^6 bP
D. Lambda phase	IV. 3.3×10^9 bP

A) A->iii, B->iv, C->i, D->ii

B) A->ii, B->i, C->iii, D->ii

C) A->iii, B->iv, C->ii, D->i

D) A->iii, B->ii, C->iv, D->i

150. Q.Id: 156277

Match the following

List1	List2
A. Ascomycetes	I. Imperfect fungi
B. Basidiomycetes	II. Sac fungi
C. Deuteromycetes	III. Algae fungi
D. Phycomycetes	IV. Bracket fungi

A) A->i, B->iii, C->ii, D->iv

B) A->ii, B->iv, C->i, D->iii

C) A->iii, B->i, C->ii, D->iv

D) A->iv, B->ii, C->iii, D->i

151. Q.Id: 156276

Match the following

List1	List2
A. GGU	I. Methionine
B. UUU	II. Stop
C. AUG	III. Glycine
D. UAG	IV. Phenylalanine
E. .	V. Valine

A) A->v, B->iii, C->iv, D->i   **B)** A->ii, B->iv, C->v, D->i

C) A->iii, B->iv, C->i, D->ii   **D)** A->iv, B->ii, C->iii, D->i

152. Q.Id: 156275

Assertion (A) : Leghemoglobin is oxygen scavenger

Reason (R) : It protects Nitrogenase enzyme from oxygen

A) A is true R is false

B) A & R are true but R is not the correct explanation for A

C) A & R are true R is the correct explanation for A

D) R is true A is false

153. Q.Id: 156274

Practice of mating of superior males of one breed with superior females of another breed is

A) Inbreeding   **B)** Outbreeding

C) Out crossing   **D)** Cross breeding

154. Q.Id: 156273

The dominant phenotype is dependent on which one of the following?

A) Functioning of modified allele

B) Functioning of unmodified allele

C) Non functional enzymes

D) Non functioning of unmodified allele

155. Q.Id: 156271
The opted herbicide to kill only dicot weed is _ _ _ _

A) ABA

B) IBA

C) GA$_3$

D) 2,4 - D

156. Q.Id: 156270
Bacterial mesosomes does not involve in _ _ _ _ _ _ _

A) Respiration

B) Secretion

C) Protection

D) Replication

157. Q.Id: 156269
Common vector less gene transfer method adapted in animal cell

A) Microinjection

B) Gene gum

C) Biolistics

D) Disarmed pathogen vector

158. Q.Id: 156268
Which of the following characters is not a difference between dicot and monocot leaves?

A) Differentiated mesophyll

B) Distribution of stomata

C) Presence of chlorenchyma

D) Vascular bundles

159. Q.Id: 156267
Match the following

List1	List2
1. Pusa komal	I. Hill bunt
2. Himagiri	II. TMV
3. Pusa subhadra	III. Bacterial blight
4. Pusa sadabahar	IV. Black rot

A) 1->ii, 2->i, 3->iv, 4->iii

B) 1->iii, 2->i, 3->iv, 4->ii

C) 1->iv, 2->iii, 3->i, 4->ii

D) 1->ii, 2->iv, 3->iii, 4->i

160.

Match Column - I and Column - II and choose correct option.

List1	List2
A. Coding strand	I. ρ factor
B. Template strand	II. Splicing
C. SnRNAs	III. σ factor
D. Termination of transcription	IV. 5' → 3' polarity
E. Initiation of transcription	V. 3' → 5' polarity

A) a-> iv, b-> v, c-> i, d-> iii, e-> ii   **B)** a-> v, b-> iv, c-> ii, d-> iii, e-> i

C) a-> iv, b-> v, c-> ii, d-> i, e-> iii   **D)** a-> v, b-> iv, c-> iii, d-> i, e-> ii