BOTANY - SECTION A

1 The mass of living material at a tropic level at a particular time is called
1. Gross primary productivity
2. Standing state
3. Net primary productivity
4. standing crop

2 At the trophic level of consumers, the rate at which food energy is assimilated, is called:
1. Secondary productivity
2. Gross primary productivity
3. Net primary productivity
4. None of these

3 Humification results in the formation of ---- substance
1. Colloidal, Basic
2. Acidic, Dark coloured
3. Amorphous, Light coloured
4. Light-coloured, Colloidal

4 Read the following statements and select the correct option.
Statement A: Detritus is raw material for decomposition.
Statement B: Detritus food chain does not involve autotrophs.
1. Only statement A is correct
2. Only statement B is correct
3. Both statements A and B are correct
4. Both statements A and B are incorrect

5 What is the source of energy for all ecosystems on Earth, except for the deep sea hydro-thermal ecosystem?
1. Sun
2. Hydrothermal vents
3. Lava
4. Water

6 In terrestrial ecosystem such as forest maximum energy is found in which trophic level?
1. T_1
2. T_2
3. T_3
4. T_4

7 Which of the following statement about GFC is incorrect?
1. Sun is the source of energy
2. Begins with consumers
3. Major conduit for energy flow in aquatic ecosystems
4. Size of organisms commonly increase at higher trophic levels

8 Downstream processing includes all of the following, except
1. Separation of product
2. Purification of protein
3. Expression of protein in desired host
4. Preservation of desired protein

9 Which of the following statement is incorrect?

1.	Ecosystems are exempted from the Second Law of thermodynamics.
2.	An ecosystem has a tendency toward increasing disorderliness.
3.	Flow of energy is unidirectional from the sun to producers and then to consumers.
4.	All organisms are dependent for their food on producers, either directly or indirectly

10 What type of ecological pyramid would be obtained with the following data?
Secondary consumer: 120 g
Primary consumer: 60 g
Primary producer: 10 g
1. Inverted pyramid of biomass
2. Pyramid of energy
3. Upright pyramid of numbers
4. Upright pyramid of biomass

11 What does 10 per cent law say?

1.	Less than 10 per cent of the energy is transferred to each trophic level from the lower trophic level
2.	Only 10 per cent of the energy is transferred to each trophic level from the lower trophic level
3.	Only 10 per cent of the energy is assimilated from the eaten food
4.	Consumer gains 10 per cent mass of the consumed food

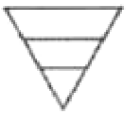
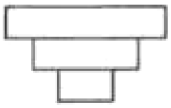
12 Mark the incorrect match

1.	Primary productivity - Varies in different types of ecosystems
2.	GPP - Available biomass for the consumption to herbivores
3.	55 billion tons - Annual NPP of oceans
4.	Secondary productivity - Rate of formation of new organic matter by consumers

13 Identify the incorrect statement regarding the ecological pyramids:

1.	The trophic level represents a functional level, not a species as such.
2.	Pyramid of energy is always upright, can never be inverted.
3.	Ecological pyramids are based on complex food webs and the saprophytes are placed at the top.
4.	A given species may occupy more than one trophic level in the same ecosystem at the same time.

14 Which of the following is inverted pyramid and what it could be for ?

1.	 - Pyramid of energy
2.	 - Pyramid of biomass in aquatic ecosystem
3.	 - Pyramid of energy in tree ecosystem
4.	 - Pyramid of number in tree ecosystem

BOTANY - SECTION B

15 The important step in the process of decomposition in order is:

1.	Catabolism → Fragmentation → Leeching → Humification → Mineralization
2.	Catabolism → Fragmentation → Humification → Leeching → Mineralization
3.	Fragmentation → Humification → Catabolism → Leeching → Mineralization
4.	Fragmentation → Leeching → Catabolism → Humification → Mineralization

16 Why do we call the earthworm as the farmer's friend?

1. It eats the pests.
2. It prevents the growth of weeds.
3. It makes the soil fertile by burrowing.
4. It helps in the breakdown of complex organic matter as well as in loosening of the soil.

17 Mark True (T) and False (F) from following statements:

a. lntine is made up of cellulose and lignin
b. Exine is made up of sporopollenin and pectin
c. Generative cell has irregular nucleus d. Vegetative cell has abundant food reserve

	(a)	(b)	(c)	(d)
1.	T	F	T	F
2.	T	T	T	F
3.	F	F	F	T
4.	F	T	F	T

18 Match the description (given in column I) with correct stage o prophase I (given column II) and choose the correct option.

	Column I		Column II
A.	Chromosomes are moved to spindle fibre	I.	Pachytene
B.	Centromore splits and chromatids move apart	II.	Zygotene
C.	Paring between homologous chromosomes takes place	III.	Anaphase
D.	Crossing between homologous chromosomes	IV.	Metaphase

Options:	(A)	(B)	(C)	(D)
1.	I	II	III	IV
2.	II	III	IV	I
3.	IV	III	II	I
4.	III	I	IV	II

19 Ripening of fruits, such as bananas, is hastened by

1. gibberellins
2. abiscisic acid
3. cytokinin
4. ethylene

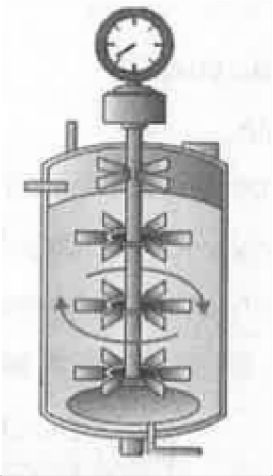
20

Assertion (A):	The newly formed mRNA has the same sequence as the coding stand of transcriptional unit with uracil present in place of thymine.
Reason (R):	The rule of complementarily guides the formation of DNA and RNA.

1.	Both (A) and (R) are True and (R) is the correct explanation of (A).
2.	Both (A) and (R) are True and (R) is not the correct explanation of (A).
3.	(A) is True but (R) is False.
4.	(A) is False but (R) is True.

ZOOLOGY - SECTION A

21 Select the correct statement regarding the bioreactor diagram given below.



1.	Sterile air bubbles arc sparged through reactors to increase the oxygen transfer area
2.	Purification of product occurs in this reactor
3.	Only anaerobic processes occur in this reactor
4.	In these vessels raw materials are biologically converted into specific products

22

Assertion:	Continuous culture system is a preferred mode in industries over batch culture method.
Reason:	Continuous culture produces larger biomass leading to higher yield of desired protein.

1. Both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
2. Both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion.
3. Assertion is true but Reason is false.
4. Both Assertion and Reason are false.

23 Select the incorrect statement regarding plasmid.

1.	Autonomously replicating DNA molecule
2.	Closed circular single stranded DNA present in most bacterial cells
3.	It does not carry any vital gene necessary for prokaryotic cell
4.	It can replicate independent of main genome of a bacterial cell

24

Assertion (A):	In vitro fertilisation, leading to a 'test-tube' baby, is included under the umbrella of biotechnology.
Reason (R):	The definition of biotechnology, given by EFB encompasses only modern molecular biotechnology view.

Choose the correct answer from the options given below:
1. (A) is True but (R) is False.
2. (A) is False but (R) is True.
3. Both (A) and (R) are True and (R) is the correct explanation of (A).
4. Both (A) and (R) are True but (but) (R) is not the correct explanation of (A).

25 Consider the following steps involved in recombinant DNA technology
A. Downstream processing
B. Insertion of recombinant DNA into the host cell
C. Isolation of genetic material
D. Obtaining the foreign gene product
E. Cutting of DNA at specific locations
Choose the correct sequence of steps
1. C, A, B, D, E
2. C,E,B, D, A
3. A, E, B, D, C
4. C, E, D, B, A

26 Read statements A and B and select the correct option given below.

Statement A:	DNA is a hydrophilic molecule, thus it cannot pass through cell membrane.
Statement B:	Electroporation creates transient microscopic pores in cell membrane making entry of DNA molecules into the cell easier.

1. Both statements A and B are correct
2. Both statements A and B are incorrect
3. Statement A is correct but B is incorrect
4. Statement A is incorrect but B is correct

27 Which of the following methods can be used for making the bacterial cell "competent"?
1. Treating with specific concentration of divalent cation (Ca^{+2})
2. Treating with specific concentration of monovalent cation (K^{+})
3. Heat shock at 42°C
4. Heat shock at 94°C

28 If a foreign DNA is inserted at BamHI restriction site in PBR322; then colonies of recombinant bacteria will

1.	Show resistance to tetracycline
2.	Be able to grow in medium containing ampicillin
3.	Form blue coloured colonies in presence of chromogenic substrate
4.	Be susceptible to ampicillin

29 Read statements 'A' and 'B' and choose the correct option.

Statement A:	Agrobacterium tumefaciens causes crown gall in dicots
Statement B:	Agrobacterium tumefaciens enters the host through wound and injuries in certain plants.

1. B is correct, A is incorrect
2. Both A and B are correct
3. Both A and B are incorrect
4. Ais correct, B is incorrect

30 Select the correct match w.r.t steps involved in PCR.

1.	Denaturation	-	Phosphodiester bonds break
2.	Annealing	-	Primers anneal at 5' end of DNA template
3.	Extension	-	Taq polymerase forms hydrogen bonds between adjacent nucleotides of growing DNA strand
4.	Extension	-	Thermostable DNA polymerase adds nucleotide to 3' end of primers

31 While constructing the first recombinant DNA molecule, Stanley Cohen and Herbert Boyer isolated plasmid from ___a____ while ___b___ acted as host for the recombinant plasmid. Select the option which gives correct answer for blanks in above statements.

	a	b
1.	*Escherichia coli*	*Salmonella typhimurium*
2.	*Salmonella typhimurium*	*Escherichia coli*
3.	*Haemophilus influenzae*	*Agrobacterium tumefaciens*
4.	*Agrobacterium tumefaciens*	*Haemophilus influenzae*

32

Assertion (A):	Synthetic oligonucleotide polymers are used during annealing in a PCR.
Reason (R):	The primers bind to the double stranded DNA at their complementary regions.

1.	Both (A) and (R) are True and (R) is the correct explanation of (A).
2.	Both (A) and (R) are True and (R) is not the correct explanation of (A).
3.	(A) is True but (R) is False.
4.	(A) is False but (R) is True.

33

Assertion: (A)	We cannot see pure DNA fragments in the visible light under microscope.
Reason: (R)	The DNA fragments separate according to their shape only and are too small to be seen in the gel electrophoresis.

1. Both (A) and (R) are True and the (R) is the correct explanation of the (A).
2. Both (A) and (R) are True and the (R) is not the correct explanation of the (A).
3. (A) is True but (R) is False.
4. Both (A) and (R) are False.

34 Read the following statements and choose the correct option.

Statement (A):	In gel electrophoresis, the most commonly used matrix is agarose.
Statement (B):	Agarose is a natural polymer extracted from sea weeds.

1. Both statements (A) and (B) are correct
2. Both statements (A) and (B) are incorrect
3. Only statement (A) is correct
4. Only statement (B) is correct

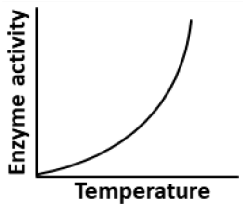
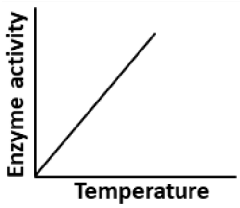
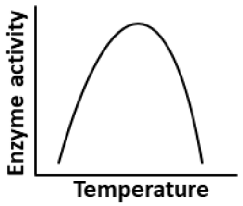
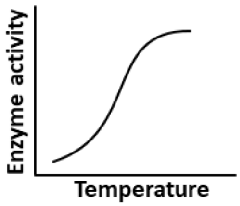
ZOOLOGY - SECTION B

35

Assertion:	Homologous organs show common ancestry.
Reason:	Analogous organs does not indicate common ancestry.

1. Both assertion and reason are true and the reason is the correct explanation of the assertion.
2. Both assertion and reason are true and the reason is not the correct explanation of the assertion.
3. Assertion is true but reason is false.
4. Both assertion and reason are false.

36 Which of the following graphs correctly represents the effect of change in temperature on enzyme activity?

1.		2.	
3.		4.	

37 Select the mismatch w.r.t drug and it's source plant.

1.	Charas	-	*Cannabis Sativa*
2.	Morphine	-	*Papaver somniferum*
3.	Atropine	-	*Atropa belladona*
4.	crack	-	*Datura*

38 Read the following statements and choose the correct option

Statement A:	Darwin either ignored Mendel's work on inheritable factors or kept silence
Statement B:	One of the drawbacks of Darwin's theory of natural selection was that it could not explain origin of variations

1. Only statements A is correct
2. Only statement B is correct
3. Both statements A and B are incorrect
4. Both statements A and B are correct

39 All of the following statements are correct regarding AIDS, except

1.	It is caused HIV which is ab enveloped, RNA virus
2.	It is a hereditary and congenital disease as AIDS passes on from mother o child at birth
3.	Symptoms of AIDS begin to appear when T_4-lymphocyte count decreases drastically
4.	A person could be detected as HIV positive, but it is not necessary that he is suffering from AIDS at that point of time

40 Match column-I with column-II and select the correct option.

a.	Thomas Malthus	(i)	Malay Archipelago
b.	Louis Pasteur	(ii)	H.M.S Beagle
c.	Ernst Heckel	(iii)	His work on populations influenced Darwin
d.	Alfred Wallace	(iv)	Proposed embryological support for evolution
		(v)	Theory of biogenesis

1. a(ii), b(iv), c(i), d(ii)
2. a(iii), b(v), c(iv), d(ii)
3. a(iii), b(v), c(iv), d(i)
4. a(i), b(iii), c(ii), d(iv)

CHEMISTRY - SECTION A

41 The decreasing order of dipole moment of methyl halides is represented by:

1. CH_3Cl, CH_3Br, CH_3F
2. CH_3Cl, CH_3F, CH_3Br
3. CH_3Br, CH_3Cl, CH_3F
4. CH_3Br, CH_3F, CH_3Cl

42 p-Dichlorobenzene has a higher melting point than those of o- and m-isomers because :

1.	More energy is required to break the crystal lattice of m-dichlorobenzene
2.	More energy is required to break the crystal lattice of p-dichlorobenzene
3.	More energy is required to break the crystal lattice of o-dichlorobenzene
4.	None of the above

43 The C-Cl bond of chlorobenzene in comparison to the C-Cl bond in methyl chloride is:

1. Shorter and weaker
2. Shorter and stronger
3. Longer and weaker
4. Longer and stronger

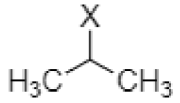
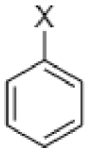
44

$HC \equiv CNa + Cl - CH_2 - CH_2 - CH_2 - I \rightarrow (A)$

The major product (A) in the above reaction is :

1. H-C≡C-CH_2-CH_2-CH_2-I
2. CH_2=CH-CH_2-I
3. H-C≡C-CH_2-CH_2-CH_2-Cl
4. CH_2=CH-CH_2-Cl

45 Match the structures of compounds given in Column I with the classes of compounds given in Column II.

Column l		Column ll	
A.		1.	Aryl halide
B.	CH_2=CH-CH_2-X	2.	Alkyl halide
C.		3.	Vinyl halide
D.	CH_2=CH-X	4.	Allylic halide

Codes

	A	B	C	D
1.	2	4	1	3
2.	3	4	1	2
3.	1	4	3	2
4.	4	1	3	2

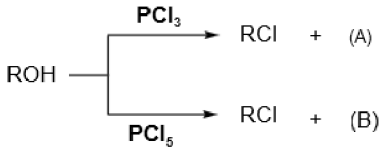
46

$C_6H_5CH_2Br \xrightarrow[2.\ H_3O^+]{1.Mg,Ether} X,\backslash$

The product 'X' in the above reaction is:

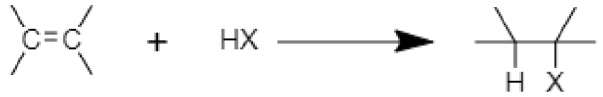
1. $C_6H_5CH_2OH$
2. $C_6H_5CH_3$
3. $C_6H_5CH_2CH_2C_6H_5$
4. $C_6H_5CH_2OCH_2C_6H_5$

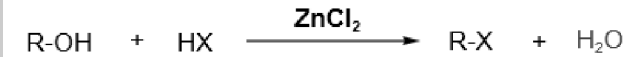
47 The products (A) and (B) in the below reactions are, respectively:

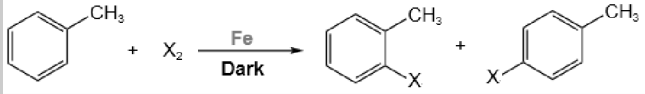


1. $POCl_3$ and H_3PO_3
2. PCl_3 and H_3PO_3
3. H_3PO_4 and $POCl_3$
4. H_3PO_3 and $POCl_3$

48 The halogen exchange reaction among the following is exhibited by:

1. $RX + NaI \xrightarrow{\text{Acetone}} RI + NaX$
2. 

3. 

4. 

49 For S_N1 reaction, the preferred solvent will be:

1.	Water	2.	Benzene
3.	Ether	4.	Toluene

50 Which of the following compounds has the lowest boiling point?

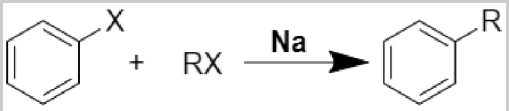
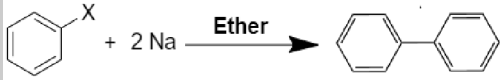
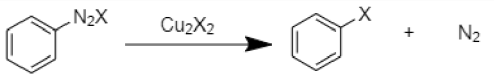
1. Pentyl chloride
2. tertiary-Butyl chloride
3. Isobutyl chloride
4. n-Butyl chloride

51 The major product X in the given reaction is:

$CH_3 - CH_2 - Br \xrightarrow{\text{AgCN}} X$ X.

1. $CH_3 - CH_2 - CN$
2. $CH_3 - CH_2\,Ag$
3. $CH_3 - CH_2\,NC$
4. None of the above

52 Match the reactions given in Column I with the names given in Column II:

COLUMN I		COLUMN II	
A.		1.	Fittig reaction
B.		2.	Wurtz-Fittig reaction
C.		3.	Finkelstein reaction
D.	$C_2H_5Cl + NaI \xrightarrow{\text{dry acetone}} C_2H_5I + NaCl$	4.	Sandmeyer reaction

Codes

	A	B	C	D
1.	2	1	4	3
2.	3	1	4	2
3.	1	4	3	2
4.	4	1	3	2

53 The product (C) in the below-mentioned reaction is:

$CH_3CH_2CH_2Br \xrightarrow{\text{KOH(alc.)}}$

$(A) \xrightarrow{\text{HBr}} (B) \xrightarrow{\text{KOH(aq}} (C)$

1.	Propene	2.	Propyne
3.	Propan-1-ol	4.	Propan-2-ol

54 Primary alkyl halide C_4H_9Br(A) reacted with alcoholic KOH to give compound (B). Compound (B) is reacted with HBr to give (C), and it was found that C is an isomer of (A).

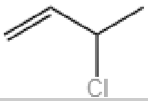
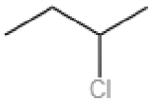
(A) with sodium metal, gives compound (D), C_8H_{18} which is different from the compound formed when n-butyl bromide is reacted with sodium.

Compound (A) is :

1. 2-Methylpropene
2. Isobutyl bromide
3. 2,5-Dimethylhexane
4. 2-Bromo-2-methylpropane

CHEMISTRY - SECTION B

55 The correct sequence among the following for the below mentioned three chlorides in decreasing order towards S_N1 reactivity will be:

1.		2.	
3.			

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

56 The hybridisation of $[FeF_6]^{3-}$ is:

1. sp^3d^2
2. d^2sp^3
3. dsp^3
4. sp^3

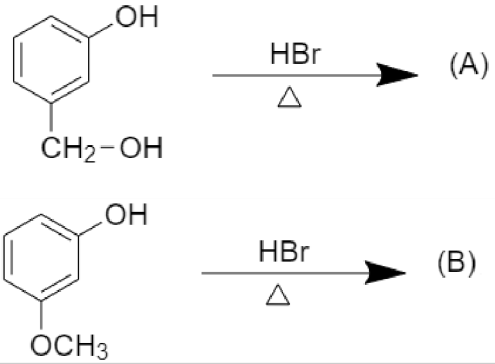
57 What is the name of the complex that is not expected to exhibit isomerism?

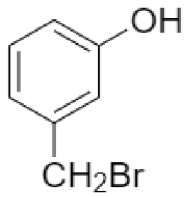
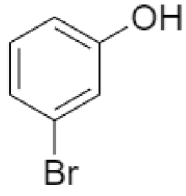
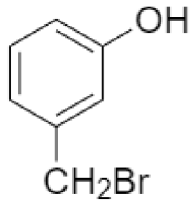
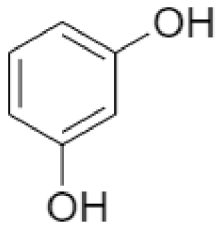
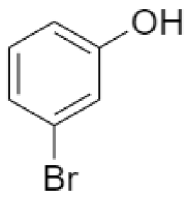
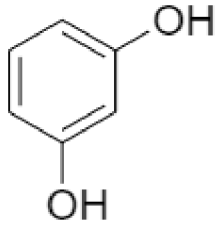
1. $[Pt(NH_3)_2Cl_2]$
2. $[Ni(NH_3)_2Cl_2]$
3. $[Ni(en)_3]^{2+}$
4. $[Ni(NH_3)_4(H_2O)_2]^{2+}$

58 The ligand that cannot act as an ambidentate ligand is:

1.	CN^-	2.	NO_2^-
3.	SCN^-	4.	NH_3

59 Products (A) and (B) in the given below reactions, respectively, are:



	(A)	(B)
1.		
2.		
3.		
4.	None of the above	

60 The correct statement, among the following, about $[Co(CN)_6]^{3-}$ is :

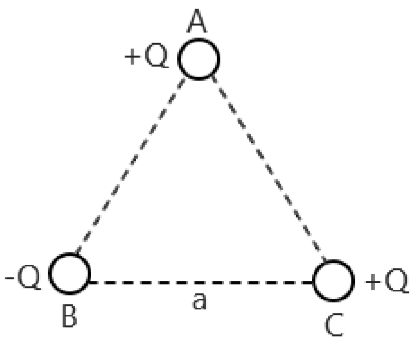
1.	It has no unpaired electrons and will be in a low-spin configuration
2.	It has four unpaired electrons and will be in a low-spin configuration
3.	It has four unpaired electrons and will be in a high-spin configuration
4.	It has no unpaired electrons and will be in a high-spin configuration

PHYSICS - SECTION A

61 Three stars A, B, and C have surface temperatures T_A, T_B and T_C respectively. Star A appears bluish, star B appears reddish and star C yellowish. Hence,

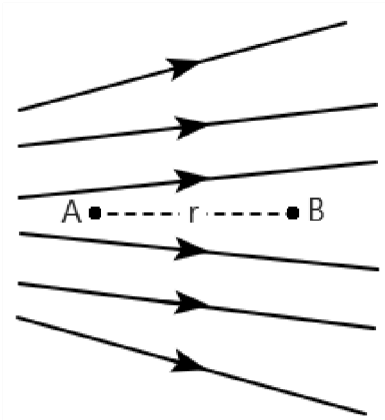
1.	$T_A > T_B > T_C$	2.	$T_B > T_C > T_A$
3.	$T_C > T_B > T_A$	4.	$T_A > T_C > T_B$

62 Three charges are placed at the vertices of an equilateral triangle of side a as shown in the following figure. The force experienced by the charge placed at the vertex A in a direction normal to BC is:



1. $Q^2/(4\pi\varepsilon_0 a^2)$
2. $-Q^2/(4\pi\varepsilon_0 a^2)$
3. zero
4. $Q^2/(2\pi\varepsilon_0 a^2)$

63 The figure shows the electric lines of force emerging from a charged body. If the electric field at A and B are E_A and E_B respectively and if the displacement between A and B is r, then:



1. $E_A > E_B$
2. $E_A < E_B$
3. $E_A = \frac{E_B}{r}$
4. $E_A = \frac{E_B}{r^2}$

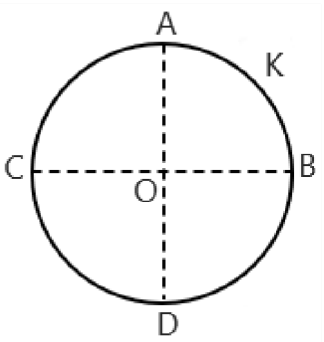
64 Two charges $+2$ C and $+6$ C are repelling each other with a force of 12 N. If each charge is given -2 C of charge, then the value of the force will be:

1.	4 N (attractive)	2.	4 N (repulsive)
3.	8 N (repulsive)	4.	zero

65 When an ideal diatomic gas is heated at constant pressure, the fraction of the heat energy supplied which increases the internal energy of the gas is?

1. $\frac{2}{5}$
2. $\frac{3}{5}$
3. $\frac{3}{7}$
4. $\frac{5}{7}$

66 A thin conducting ring of radius R is given a charge $+Q$. The electric field at the centre O of the ring due to the charge on the part AKB of the ring is E. The electric field at the centre due to the charge on the part ACDB of the ring is:



1. $3E$ along KO
2. E along OK
3. E along KO
4. $3E$ along OK

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

1.	increase by a factor of 20	2.	increase by a factor of 10
3.	decrease by a factor of 20	4.	decrease by a factor of 10

68 An electric dipole is placed at an angle of 30° with an electric field intensity 2×10^5 N/C .It experiences a torque equal to 4 Nm .The charge on the dipole, if the dipole length is 2 cm, is:

1.	8 mC	2.	2 mC
3.	5 mC	4.	7 μC

69 A particle executes linear SHM between $x = A$. The time taken to go from 0 to $A/2$ is T_1 and to go from $A/2$ to A is T_2, then:

1.	$T_1 < T_2$	2.	$T_1 > T_2$
3.	$T_1 = T_2$	4.	$T_1 = 2T_2$

70 A charge q is placed in a uniform electric field E. If it is released, then the kinetic energy of the charge after travelling distance y will be:

1. qEy
2. $2qEy$
3. $\frac{qEy}{2}$
4. $\sqrt{qEy}$

71 When 10^{19} electrons are removed from a neutral metal plate, the electric charge on it is?

1.	-1.6 C	2.	$+1.6$ C
3.	10^{19} C	4.	10^{-19} C

72 At room temperature, the rms speed of the molecules of certain diatomic gas is found to be 1930 m/s. The gas is:

1.	H_2	2.	F_2
3.	O_2	4.	Cl_2

73 An electric dipole is placed at the centre of a sphere. Which of the following statements is correct?

1.	The electric flux through the sphere is zero.
2.	The electric field is zero at every point on the sphere.
3.	The electric field is zero at every point inside the sphere.
4.	The electric field is uniform inside the sphere.

74 A total charge Q is broken in two parts Q_1 and Q_2 and they are placed at a distance R from each other. The maximum force of repulsion between them will occur, when:

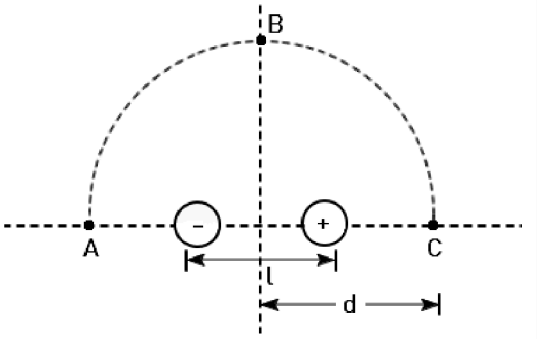
1.	$Q_2 = \frac{Q}{R}, Q_1 = Q - \frac{Q}{R}$
2.	$Q_2 = \frac{Q}{4}, Q_1 = Q - \frac{2Q}{3}$
3.	$Q_2 = \frac{Q}{4}, Q_1 = \frac{3Q}{4}$
4.	$Q_1 = \frac{Q}{2}, Q_2 = \frac{Q}{2}$

PHYSICS - SECTION B

75 A point charge is placed at the center of the spherical Gaussian surface. The electric flux through the surface is changed if the:

1.	sphere is replaced by a cube of the same volume.
2.	sphere is replaced by a cube of half volume.
3.	charge is moved off-centre in the original sphere.
4.	charge is moved just outside the original sphere.

76 An electric dipole is kept at the origin as shown in the diagram. The point A, B, C are on a circular arc with the centre of curvature at the origin. If the electric fields at A, B and C respectively are $\vec{E_1}$, $\vec{E_2}$, $\vec{E_3}$, then which of the following is incorrect? $(d \gg l)$

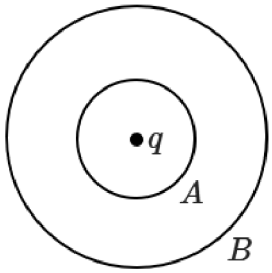


1. $\vec{E_1} = -\vec{E_3}$
2. $\vec{E_1} = -2\vec{E_2}$
3. $\vec{E_1} = \vec{E_3}$
4. $\vec{E_3} = -2\vec{E_2}$

77 What is the flux through a cube of side a, if a point charge of q is placed at one of its corners?

1. $\frac{2q}{\varepsilon_o}$
2. $\frac{q}{8\varepsilon_o}$
3. $\frac{q}{\varepsilon_o}$
4. $\frac{q}{2\varepsilon_o}$

78 The ratio of the electric flux linked with shell A and shell B in the diagram shown below is:

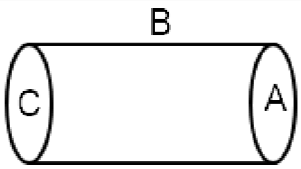


1.	1 : 1	2.	1 : 2
3.	1 : 4	4.	4 : 2

79 The electric field at the equator of a dipole is E. If the strength of the dipole and distance are now doubled, then the electric field will be:

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

80 A hollow cylinder has a charge q coulomb within it (at the geometrical centre). If ϕ is the electric flux in units of Volt-meter associated with the curved surface B, the flux linked with the plane surface A in units of volt-meter will be:



1. $\frac{1}{2}\left(\frac{q}{\varepsilon_0} - \Phi\right)$
2. $\frac{q}{2\varepsilon_0}$
3. $\frac{\Phi}{3}$
4. $\frac{q}{\varepsilon_0} - \Phi$

Fill OMR Sheet*

*If above link doesn't work, please go to test link from where you got the pdf and fill OMR from there. After filling the OMR, you would get answers and explanations for the questions in the test.