Paper Code: 02

CAREER POINT

Scholastic Test for Analysis and Reward

CLASS - 12th (PCB)

(Class 12th Studying Students)

Duration: 2:00 hours

Maximum marks: 360

Instructions to Candidates

1. CP Star Test paper consists of total 90 questions and has been divided in three sections as follows:

- a. Physics
- b Chemistry
- c. Biology

25 Questions 25 Questions 40 Questions Que. No. 01 to 25 Que. No. 26 to 50 Que. No. 51 to 90

- 2. All questions are compulsory.
- 3. All the answers will be encircled in OMR sheet which is being provided along with this paper.
- 4. For every correct answer marked by you, **4** marks will be allotted.
- 5. For every incorrect answer marked by you, **1** marks will be deducted.
- 5. Use of calculator is not permitted in any case.
- 7. Any kind of malpractice will expel you from exam immediately.
- 8. For any confusion please talk to the invigilator in the examination hall.
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SECTION-a [PHYSICS]

Q.1 A large sheet carries uniform surface charge density σ . A rod of length 2ℓ has a linear charge density λ on one half and $-\lambda$ on the other half. The rod is hinged at mid-point O and makes angle θ with the normal to the sheet. The torque experienced by the rod is (consider electric field due to sheet of charge



Q.2 The field pattern is shown due to two point charges 1 and 2. Then $\frac{q_1}{q_2} =$



Q.3 In the given electric field

 $E = [(d + x) \ \hat{i} + E_0 \ \hat{j}]$ N/C a hypothetical closed surface is taken as shown in figure. The total charged enclosed within the close surface is -



(1)
$$\frac{\text{abc} \in_0}{2}$$
 (2) $\frac{\text{acd} \in_0}{2}$ (3) $\frac{\text{abd} \in_0}{2}$ (4) None





Q.5 Two parallel plate air filled capacitors each of capacitance C, are joined in series to a battery of emf V. The space between the plates of one of the capacitors is then completely filled up with a uniform dielectric having dielectric constant K. The quantity of charge which flows through the battery is -

(1)
$$\frac{CV}{2} \left(\frac{K-1}{K+1} \right)$$
 (2) $\frac{CV}{2} \left(\frac{K+1}{K-1} \right)$
(3) $CV \left(\frac{K-1}{K+1} \right)$ (4) $CV \left(\frac{K+1}{K-1} \right)$

Q.6 Six metallic plates each with a surface area of one side A, are placed at a distance d from each other. The alternate plates are connected to points P and Q as shown in figure :



Q.7 Eels are able to generate current with biological cells called electroplaques. The electroplaques in an eel are arranged in 100 rows, each rwo stretching horizontally along the body of the fish containing 5000 electroplaques. arrangement The is suggestively shown below. Each electroplaque has an emf of 0.15 V and internal resistance of 0.25Ω . The water surrounding the eel completes a circuit between the head and its tail. If the water surrounding it has a resistance of 500 Ω , the current an eel can produce in water is about



Q.8 In the circuit shown in figure the potential difference between the points C and D is balanced against 40 cm length of potentiometer wire of total length 100 cm. In order to balance the potential difference between the points D and E, where should jockey be pressed on potentiometer wire i.e. balance length is-



Q.9 A conductor with rectangular cross-section has dimensions ($a \times 2 \ a \times 4 \ a$) as shown in figure. Resistance across AB is R₁, across CD is R₂ and across EF is R₃. Then



Space for rough work

Q.10 Shown in the figure is a conductor carrying a current I. The magnetic field intensity at the point O(common centre of all the three arcs) is-



Q.11 If a charged particle of charge to mass ratio

 $\frac{q}{m} = \alpha$ enters in a magnetic field of strength B at a speed v = (2\alphad)(B), then -



- (1) angle subtended by the path of charged particle in magnetic field at the center of circular path is 2π
- (2) the charge will move on a circular path and then will come out from magnetic field at some distance from the point of insertion
- (3) the time for which particle will be in the magnetic field is $\frac{2\pi}{\alpha B}$
- (4) angle subtended by the path of charged particle in magnetic field at the center of circular path is $\pi/2$

Space for rough work

Q.12 A rigid conducing wire bent as shaped in the figure, is released to fall freely in a horizontal magnetic field which is perpendicular to the plane of the conductor. If the magnetic field strength is B, then the emf induced across the points A and C when it has fallen through a distance h will be -



Q.13 A wooden stick of length 3ℓ is rotated about an end with constant angular velocity ω in a uniform magnetic field B perpendicular to the plane of motion. If the upper one-third of its length is coated with copper, the potential difference across the whole length of the stick is



Q.14 In the circuit shown, voltmeter reads 100V. Then L is



Q.15 Mean value of the given alternating current (A.C.) for half cycle (0 to T/2), is -





Q.17 Calculate value of i for which light ray will retrace its original path-



Q.18 A ray of light is incident on a plane mirror along a vector $\hat{i} + \hat{j} - \hat{k}$. The normal on incidence point is along $\hat{i} + \hat{j}$. Then unit vector along the reflected ray is -

(1)
$$\frac{1}{\sqrt{3}} (\hat{i} + \hat{j} + \hat{k})$$
 (2) $-\frac{1}{\sqrt{3}} (\hat{i} + \hat{j} + \hat{k})$
(3) $\frac{1}{\sqrt{3}} (-\hat{i} - \hat{j} + \hat{k})$ (4) None of these

Q.19 Energy levels A, B, C of a certain atom corresponds to increasing values of energy, i.e., $E_A < E_B < E_C$. If λ_1 , λ_2 and λ_3 are the wavelengths of radiations corresponding to the transitions, C to B, B to A and C to A respectively, which of the following statement is correct ?



Space for rough work

Q.20 The radius of the nth Bohr orbit of hydrogen like atom of atomic number Z is given by :

(where k =
$$\frac{1}{4\pi\epsilon_0}$$
)
(1) $\frac{n^2h^2}{4\pi^2kZme^2}$ (2) $\frac{k\pi h}{4\pi^2Zme^2}$
(3) $\frac{n^2h^2}{2\pi^2kZme^2}$ (4) $\frac{nh}{2\pi^2kZme^2}$

Q.21 A sample of radioactive material decays simultaneously by two processes A and B with half-lives $\frac{1}{2}$ hr and $\frac{1}{4}$ hr, respectively. For first half hour it decays with the process A, next one hour with the process B, and for further half an hour with both A and B. If originally there were N₀ nuclei, find the number of nuclei after 2h of such decay.

(1)
$$\frac{N_0}{(2)^8}$$
 (2) $\frac{N_0}{(2)^4}$ (3) $\frac{N_0}{(2)^6}$ (4) $\frac{N_0}{(2)^5}$

Q.22 During mean life of a radioactive element, the fraction that disintegrates is -

(1) e (2)
$$\frac{1}{e}$$
 (3) $\frac{e-1}{e}$ (4) $\frac{e}{e-1}$

- - (1) $\lambda_{Ph} > \lambda_{el}$ (2) $\lambda_{Ph} < \lambda_{el}$
 - (3) $\lambda_{Ph} = \lambda_{el}$ (4) $\frac{\lambda_{el}}{\lambda_{Ph}} = C$

- Q.24 If potential of 20 kV is applied across coolidge tube then wavelength that can not emitted from coolidge tube is (1) 0.5 Å (2) 0.8 Å (3) 1 Å (4) 100 Å

SECTION-b [CHEMISTRY]

- **Q.26** Which of the following statements is incorrect ?
 - When NaCl reacts with acidified dichromate, it forms CrO₂Cl₂ which forms yellow precipitate with NaOH
 - (2) $K_2Cr_2O_7$ form deep blue solution of CrO_5 with H_2O_2 in acidic medium
 - (3) KMnO₄ is prepared form pyrolusite ore (MnO₂)
 - (4) Both KMnO₄ and K₂Cr₂O₇ are coloured due to charge transfer spectra

Q.27 The rate law of the reaction,

 $A + 2B \longrightarrow Product,$ Product is given by $\frac{d[P]}{dt} = K[A]^2.[B].$ If A is taken in large excess, the order of the reaction will be :
(1) zero
(2) 1
(3) 2
(4) 3

Q.28 Molar conductance Λ_m is plotted against \sqrt{C} (mol litre⁻¹) for three electrolytes (NaCl, HCl, NH₄OH)



which of the following is correct

2	3
HCl	NH ₄ OH
NaCl	NH ₄ OH
NaCl	HC1
HCl	NaCl
	2 HCl NaCl NaCl HCl

Q.29 A body centered cubic lattice is made up of hollow spheres of B. Spheres of solid A are present in hollow spheres of B. Radius A is half of radius of B. What is the ratio of total volume of spheres of B unoccupied by A in a unit cell and volume of unit cell ?

(1)
$$\frac{7\sqrt{3\pi}}{64}$$
 (2) $\frac{7\sqrt{3}}{128}$ (3) $\frac{7.\pi}{24}$ (4) $\frac{7\pi}{64\sqrt{3}}$

Q.30	Assuming co	omplete	ionization,	the solution
	having maxir	ing maximum freezing point will be -		
	(1) 1 M CaF ₂		(2) 1.5 M	$Al_2(SO_4)_3$
	(3) 2 M NaC	l	(4) 1 M A	gNO ₃

- Q.31
 Consider the following complexes

 (i) K_2PtCl_6 (ii) $PtCl_4.2NH_3$

 (iii) $PtCl_4.3NH_3$ (iv) $PtCl_4.5NH_3$

 Their electrical conductances in aq. solutions are

 (1) 256, 0, 97, 404
 (2) 404, 0, 97, 256

 (3) 256, 97, 0, 404
 (4) 404, 97, 256, 0
- Q.32 On heating a mixture of Cu₂O and Cu₂S, we get : (1) Cu + SO₂ (2) Cu + SO₃

(4) Cu₂SO₃

(3) CuO + CuS

Q.33 For a gas reaction at T(K) the rate is given $by - \frac{dp_A}{dt} = k' p_A^2 \text{ atm/hr. If the rate equation}$ is expressed as $: -r_A = -\frac{1}{V} \frac{dn_A}{dt} = kC_A^2$, mol/(litre-hr), the rate constant k is given by-(1) k = k' (2) k = k' RT (3) k = k'/RT (4) k = k' (RT)^2 where R = ideal gas law constant, cal/g mol. K

Q.34 Effective atomic number of Co(CO)₄ is 35, hence it is less stable. It attains stability by - (1) Oxidation of Co
(2) Reduction of Co
(3) Dimerization
(4) Both (2) and (3)

Q.35 Two solutions (A) containing $\text{FeCl}_{3(aq.)}$ and (B) containing $K_4[\text{Fe}(\text{CN})_6]$ are separated by semi permeable membrane as shown below -

(A)	(B)	
FeCl ₃	K ₄ [Fe(CN) ₆]	
5 SPM		

If $FeCl_3$ on reaction with $K_4[Fe(CN)_6]$ produces blue colour of $Fe_4[Fe(CN)_6]$, the blue colour will be noticed in -

- (1) (A)
- (2) (B)
- (3) In both (A) and (B) (
- (4) Neither in (A) nor in (B)
- Q.36 The overall cell reaction of Daniell cell is :

 $Zn(s) + Cu^{2+} = Zn^{2+} + Cu(s); E^{\circ} = +1.10 \text{ volt}$

$$Q = \frac{[Zn^{2+}]}{[Cu^{2+}]}$$

When $log_{10}Q$ is plotted on X-axis and E_{cell} on Y-axis, then which of the following will correctly represent the variation ?



Q.37 Half-life of reaction is halved as the initial concentration of the reactant is doubled. The order of reaction is -

(1) 0.5 (2) 1 (3) 2 (4) 0

- **Q.38** $\operatorname{CrO}_{4}^{2-}$ (yellow)-changes to $\operatorname{Cr}_{2}\operatorname{O}_{7}^{2-}$ (orange) in pH = x and vice-versa in pH = y, x and y can be-(1) 6, 5 (2) 6, 8 (3) 8, 9 (4) 7, 7
- **Q.39** Which of the following compounds is optically inactive ?



Q.40 Formaldehyde forms an addition product with CH₃MgI which on hydrolysis gives :
(1) ethyl iodide (2) ethyl alcohol
(3) methyl alcohol (4) methyl iodide



Q.42 In which reaction product formation takes place by Saytzeff rule ?



Q.43 In which reaction product is wrong
(1)
$$CH_3$$
-CH-CH-CH₃ $\xrightarrow{(CH_3)_3CON_a}$
 \downarrow \downarrow \downarrow
CH₃ Br
 CH_3 -C=CH-CH₃
 \downarrow
CH₃
(2) CH_3 -Cl + (CH₃)₃CONa \rightarrow CH₃-O-C(CH₃)₃

$$\begin{array}{ccc} (3) & (CH_3)_2C - C(CH_3)_2 \xrightarrow{H^{\oplus}} & (CH_3) - C - C(CH_3)_3 \\ & & & \parallel \\ & & OH OH & O \end{array}$$



Q.44
$$CH_3$$
-C-CH₃ $\xrightarrow{I_2}$ (A) $\xrightarrow{Ag \text{ powder}}$ (B) $\xrightarrow{H_2O}_{Hg^{+2}}$ (C).

Product A, B & C are -

- (1) Iodoform, Acetylene & Acetaldehyde
- (2) Triiodomethane, Ethyne & Acetone
- (3) Iodoform, Ethene & Ethylene glycol
- (4) Ethene, iodoform & Ethylhydrogen sulphate
- Q.45 When of the following gives do not aldol reaction

(1)
$$CH_3 - C - H$$

O
(2) O - $CH_2 - C - H$
O
(3) $CH_3 - C - CH_3$
O
(4) $H - C - H$
O



Q.47 Which of the following acid on heating do not form anhydride

(1) Succinic acid	(2) pthallic acid
(3) Maleic acid	(4) Malonic acid

- Q.48 Which of the following compounds will react with Br₂ and aqueous KOH to give a primary amine, RNH₂ ?
 - (1) $RCONHCH_3$ (2) $RCOONH_4$
 - (3) RCONH_2 (4) RCONHOH
- Q.49 Which is not true about acetophenone ?
 - (1) Reacts to form 2, 4-dinitrophenyl hydrazine
 - (2) Reacts with Tollen's reagent to form silver mirror
 - (3) Reacts with I_2 /NaOH to form iodoform
 - (4) On oxidation with alkaline KMnO₄followed by hydrolysis gives benzoic acid



SECTION-c [BIOLOGY]

- Q.51 What is the concentration of sodium & potassium when neuron is at resting potential-(1) High K⁺ and high Na⁺ outside the neuron (2) High K⁺ and low Na⁺ outside the neuron (3) Low K⁺ and low Na⁺ outside the neuron (4) Low K⁺ and high Na⁺ outside the neuron
- Q.52 Observe the above diagram. Identify 1 to 8 –



- (1) 1 Temporal bone, 2 Malleus,
 - 3 Incus, 4- Stapes, 5 Cochlea,
 - 6 Eustachian tube,
 - 7 tympanic membrane,
 - 8 External auditory canal
- (2) 1 Tympanic membrane, 2 -Malleus,
 - 3 Incus, 4 Stapes, 5 Cochelea,
 - 6 Eustachian tube,
 - 7 Temporal bone,
 - 8 External auditory canal
- (3) 1 Temporal bone, 2 Incus,
 - 3 Malleus, 4 Stapes,
 - 5 Cochlea, 6 Eustachian tube,
 - 7 Tympanic membrane,
 - 8 External auditory canal
- (4) 1 Temporal bone, 2 Malleus,
 - 3 Incus, 4 Cochlea, 5 Stapes,
 - 6 Eustachian tube,
 - 7 tympanic membrane,
 - 8 External auditory canal
- Q.53 Carotid artery supplies -(1) Brain (2) Skin (3) Lung (4) Limbs
- Q.54 Blood calcium level can be increased by the administration of (1) glucagon
 (2) parathormone
 - (3) thyroxine (4) calcitonin
- Q.55 Identify the parts in given diagram -



- (1) A-Pharynx, B-Parathyroid, C-Thyroid, D-Trachea
- (2) A-Pharynx, B-Thyroid, C-Parathyroid, D-Trachea
- (3) A-Trachea, B-Parathyroid, C-Thyroid, D-Pharynx
- (4) A-Pharynx, B-Trachea, C-Parathyroid, D-Thyroid
- Q.56 Mark the series with odd -
 - (1) Spermatocyte, Prostate, Spermatid, Acrosome
 - (2) Endometrium, Graafian follicle, Polar body
 - (3) Vas deferens, Fallopian tube, Epididymis, Cowper's gland
 - (4) Ovaries, Vagina, Bartholin's gland, Corpus luteum
- Q.57 Given below is a diagrammatic sketch of a portion of human male reproductive system. Select the correct set of the names of the parts labelled A, B, C, D -



Space for rough work

- Q.58 ZIFT is
 - (1) Embryo implantation in vivo fertilization
 - (2) Egg implantation for in vivo fertilization
 - (3) Embryo implantation after in-vitro fertilization
 - (4) Egg implantation after in vitro fertilization
- Q.59 T-lymphocyte is produced in -
 - (1) Bone marrow (2) Spleen
 - (3) Pancreas (4) Thymus
- Q.60 Which one of the following is a correct match?
 - (1) Filariasis Taenia solium
 - (2) Syphilis Treponema pallidum
 - (3) Malaria Phlebotomus sp.
 - (4) Kala-azar Anopheles stephensi
- Q.61 Telophase stage is correctly shown by -



- Q.62 One chromosome contain two DNA molecule during A. G₁ phase B. Metaphase
 C. Anaphase D.Telophase
 E. Prophase
 (1) B, C & E
 (2) A, B, C, D & E
 - (3) B & E (4) B, C, D & E
- Q.63 Reciprocal exchange of genetic material between non sister chromatid of homologous chromosome is known as <u>A</u> and it occur during <u>B</u>
 - (1) Crossing over and Pachytene
 - (2) Chiasma & Pachytene
 - (3) Crossing over and diplotene
 - (4) Synpsis and Zygotene
- Q.64 The *Bt* toxin is not toxic to human beings because -
 - (1) The pro *Bt* toxin activation requires temperature above human body temperature
 - (2) The *Bt* toxin recognizes only insect-specific targets
 - (3) The *Bt* toxin formation from pre *Bt* toxin requires pH lower than that present in human stomach
 - (4) Conversion of pro *Bt* toxin to *Bt toxin* takes place only in highly alkaline conditions
- **Q.65** Humulin is
 - (1) antibiotic
 - (2) human insulin
 - (3) digestive enzyme
 - (4) a form of chitin

Q.66 Identify the correct match for the given apparatus



Gene gun (1)

- (2) Column Chromatograph (3) Sparged tank
- Carry out bioreactor fermentation process (4) Respirometer
 - Finding out rate of respiration

Vectorless direct

chlorophyll pigments

gene transfer

Separation of

Q.67 Go through the figure and select the option out of (a - d)



Q.68 This is the method of making GM crops resistant to attack of pests. Pick up the correct befitting match.



- (1) A-Ti plasmid from Agrobacterium, B-Bacillus thuringensis, C- Recombinent DNA of plasmid of Agrobacterium tumefaciens and Bt genes of bacillus thuringensis, D-Bt cotton killing larvae of bollworm, E-Bt gene
- (2) A-Bt gene, B-Bacillus thuringensis, C-Recombinent DNA of plasmid of Agrobacterium tumefaciens and Bt genes of Bacillus thuringensis, D-Bt cotton killing larvae of bollworm, E-Ti plasmid from Agrobacterium

- (3) A-Ti plasmid from Agrobacterium, B-Recombinent DNA of plasmid of Agrobacterium tumefaciens and Bt genes of Bacillus thuringensis, C-Bacillus thuringensis, D-Bt cotton killing larvae of bollworm, E-Bt gene
- (4) A-Bt gene, B-Bt cotton killing larvae of bollworm, C-Recombinent DNA of plasmid of Agrobacterium tumefaciens and Bt genes of Bacillus thuringensis, D-Bacillus thuringensis, E-Ti plasmid from Agrobacterium
- Q.69 This is figure of plasmid PBr322. The gene conferring resistance of ampicillin (ApR) can be interrupted by insertion of a DNA fragment into the Pstl site, and the gene conferring resistance to tetracycline (TcR) can be interrupted by insertion of a DNA fragment into the BamHI site. Replication is controlled by the ColE1 origin. Use of the TcR and ApR genes allows for easy screening for recombinant carrying inserts of foreign DNA. For locating Eco RI, TcR and ApR genes on it. Identify what is represented by A, B and C.



- **Q.70** Female gametophyte in life of angiospermic plants is developed in :
 - (1) Anther (2) Stigma
 - (3) Ovule (4) Seed
- Q.71 Most common type of ovule found in angiospermic plants is :
 - (1) Anatropous
 - (2) Hemitropous
 - (3) Campylotropous
 - (4) Carcinotropous
- **Q.72** In Angiosperms each pollen grains produces two sperms. What do these sperms do in the fertilization of a flower ?
 - (1) Each one fertilizes a separate egg cell to give rise to two seeds
 - (2) One fertilizes an egg cell and the other fertilizes another cell that gives rise to the tissue of the fruit
 - (3) Both fertilizes a single egg cell
 - (4) One fertilizes an egg cell and the other fertilizes the cell that forms food reserve tissue
- Q.73 'Pusa Sawani' and 'parbhani kranti' are varieties of
 - (1) Brassica (2) Franch bean
 - (3) Okra (4) Cauliflower
- Q.74 Green muffling can be used
 - (1) To reduce noise pollution
 - (2) To reduce green house gases
 - (3) To reduce ozone depletion
 - (4) Both (1) and (2)





Q.76 Given below are diagrams A, B and C related to proportionate number of species of major taxa of invertebrates, vertebrates and plants respectively. Critically study and fill in the blanks I, II, III and IV.





- (3) I-Hexapoda, II-Amphibians, III-Fungi, IV-Angiosperms
- (4) I-Turtles, II-Amphibians, III-Fungi, IV-Angiosperms

- **Q.77** Which of the following is a secondary carnivore in an aquatic ecosystem ?
 - (1) Phytoplankton (2) Zooplankton
 - (3) Small fish (4) Large fish
- Q.78 The given kind of pyramid can **not** be possible for -



- (1) Pyramid of biomass in forest ecosystem
- (2) Pyramid of number in grassland ecosystem
- (3) Pyramid of number in lake ecosystem
- (4) Pyramid of biomass in lake ecosystem
- **Q.79** Match the components of *'lac* operon' of *E. coli* given under Column-I with their function listed in Column-II. Choose the answer with correct combination of alphabets of the two columns.

Co	lumn-I	Column-II
(Co	omponents of	(Function)
	'lac operon')	
A.	Structural gene	p. Binding site for repressor protein
В.	Operator gene	q. Codes for repressor protein
C.	Promoter gene	r .Induces lactose trans-port from the medium
D.	Regulator gene	s. Codes for enzyme proteinst. Binding site for RNA polymerase

Answer codes :

- (1) A = q, B = t, C = p, D = r
 (2) A = r, B = s, C = t, D = p
 (3) A = s, B = p, C = t, D = q
- (3) N = 3, D = p, C = t, D = q
- (4) A = t, B = s, C = q, D = p
- Q.80 In operon model, RNA polymerase binds to -
 - (1) Regulator (2) Structural gene
 - (3) Promoter gene (4) Operator gene

Q.81 P.C.R modification is

(1) A.F.L.P.
(2) R.A.P.D.
(3) Both of above
(4) R.F.L.P.

Q.82 In DNA finger printing -

- (1) Restriction enzyme digests or generate unique fragments
- (2) The polymerase chain reaction amplifies fewer DNA
- (3) The variability of repeated sequences between two restriction sites is evaluated
- (4) All of these
- Q.83 Human genome project is being headed by -
 - (1) Watson (2) Crick
 - (3) Batson (4) Morgan
- **Q.84** In the lac operon, the structural genes are switched off when repressor binds to the -
 - (1) Operator (2) Promoter
 - (3) Regulator (4) Inducer

- **Q.85** ABO blood groups in humans are controlled by the gene ℓ . It has three alleless $-\ell^A$, ℓ^B and i. Since there are three different alleles, six different genotypes are possible. How many phenotypes can occur ? (1) Two (2) Three (3) One (4) Four
- Q.86 Based on the experiments conducted by Bridges on Drosophila, the female sex of Drosophila is determined by the genes located on which chromosomes ?
 (1) Autosomes (2) X and Y
 - (3) Y (4) X
- Q.87 The linkage map of X chromosome of fruitfly has 66 units, with yellow body gene (y) at one end and bobbed hair (b) gene at the other end. The recombination frequency between these two genes (y and b) should be -

 $(1) \le 50\% \quad (2) \ 100\% \quad (3) \ 66\% \quad (4) > 50\%$

- Q.88 Imagine that in pea plant, the factors for controlling seed coat and seed shape are present on the same chromosome very close to each other, performing dihybrid experiments with these characters, Mendel would not have been able to arrive at the idea of -
 - (1) dominance
 - (2) independent assortment
 - (3) incomplete dominance
 - (4) segregation

- **Q.89** Select the correct statement from the ones given below with respect to dihybrid cross
 - (1) Tightly linked genes on the same chromosome show higher recombinations
 - (2) Genes far apart on the same chromosome show very few recombinations
 - (3) Genes loosely linked on the same chromosome shwo similar recombinations as the tightly linked ones
 - (4) Tightly linked genes on the same chromosome show very few recombination
- **Q.90** In a back cross, a F₁ hybrid is crossed with dominant parent, the offsprings :
 - (1) All will be tall (2) 3 tall : 1 short
 - (3) 1 tall : 1 short (4) 1 tall : 3 short



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