



Ranked
No. 1 Institute
of Eastern India
(By India Today Survey 2020)

Where even ordinary students get Extraordinary result.



NEET - 2023

 **QUESTION PAPER**

with

ANSWER KEY



Goal Family
Wishing you



All The Best!



for the selection in
NEET with good Rank.

GOALians Rocked in NEET - 2022 Conquered Many Seats of ALL INDIA Top Medical Colleges



SUNNY K.D. SAM
AIIMS - NEW DELHI



HADSHIT DAJ
MAMC - NEW DELHI



MD. TAUQEER MINHAS
MAMC - NEW DELHI



ADUDVA DANJAN
MAMC - NEW DELHI



AMAN YADAV
MAMC - NEW DELHI



DHARAMVEER K.D. YADAV
VMC - NEW DELHI



ANAMIKA MEHDA
VMC - NEW DELHI



SANSKRITI SHAIYYA
VMC - NEW DELHI



ANSHU RAJ
VMC - NEW DELHI



ANJALI JAJODIA
VMC - NEW DELHI



PRIYA KUMARI
LADY HARDINGE - NEW DELHI



RITIKA RANI
LADY HARDINGE - NEW DELHI



SANA MAHMOOD
LADY HARDINGE - NEW DELHI



SATYAJIT KUMAR
UCMS - NEW DELHI



PUSHPAM SUMAN
UCMS - NEW DELHI



BIPUL KUMAR
UCMS - NEW DELHI



ROUNIT BARAN
UCMS - NEW DELHI



RAUNAK RAJ
AFMC - PUNE



NEELU YADAV
AFMC - PUNE



SATYAM KUMAR
AFMC - PUNE



YASH RAJ SINGH
AFMC - PUNE

Corporate Office : B-58, GOAL Building, Budha Colony, Patna - 800001

BIHAR - 9334594165 / 66 / 67, 8405802395 / 96 / 97 | JHARKHAND - 7564900041 / 7564900042 / 7564900043

 www.goalinstitute.org



NATIONAL TESTING AGENCY
Excellence in Assessment



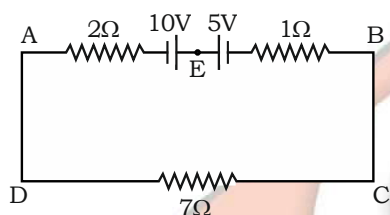
NEET 2023 ANSWER KEY

PHYSICS

SECTION-A

(All questions are compulsory)

01. The magnitude and direction of the current in the following circuit is



- (1) $\frac{5}{9}$ A from A to B through E
(2) 1.5 A from B to A through E
(3) 0.32 A from B to A through E
(4) 0.5 A from A to B through E

Ans. (4)

02. The net magnetic flux through any closed surface is :

- (1) Infinity (2) Negative (3) Zero (4) Positive

Ans. (3)

03. The amount of energy required to form a soap bubble of radius 2 cm from a soap solution is nearly : (surface tension of soap solution = 0.03 N m^{-1})

- (1) $3.01 \times 10^{-4} \text{ J}$ (2) $50.1 \times 10^{-4} \text{ J}$
(3) $30.16 \times 10^{-4} \text{ J}$ (4) $5.06 \times 10^{-4} \text{ J}$

Ans. (1)

04. A 12V, 60 W lamp is connected to the secondary of a step down transformer, whose primary is connected to ac mains of 220 V. Assuming the transformer to be ideal, what is the current in the primary winding ?

- (1) 3.7 A (2) 0.37 A (3) 0.27 A (4) 2.7 A

Ans. (3)

05. In a series LCR circuit, the inductance L is 10 mH, capacitance C is $1 \mu\text{F}$ and resistance R is 100Ω . The frequency at which resonance occurs is :

- (1) 1.59 rad/s (2) 1.59 kHz
(3) 15.9 rad/s (4) 15.9 kHz

Ans. (2)

06. Given below are two statements :

Statement-I : Photovoltaic devices can convert optical radiation into electricity.

Statement-II : Zener diode is designed to operate under reverse bias in breakdown region.

In the light of the above statements, choose the most appropriate answer from the options given below :

- (1) **Statement-I** is correct but **Statement-II** is incorrect
(2) **Statement-I** is incorrect but **Statement-II** is correct.
(3) Both **Statement-I** and **Statement-II** are correct
(4) Both Statement-I and Statement II are incorrect.

Ans. (3)

07. The temperature of gas is -50°C . To what temperature the gas should be heated so that the rms speed is increased by 3 times ?

- (1) 3097 K (2) 223 K
(3) 669°C (4) 3295°C

Ans. (4)

08. The venturi-meter works on :

- (1) The principle of parallel axes
(2) The principle of perpendicular axes
(3) Huygen's principle
(4) Bernoulli-principle

Ans. (4)

09. A vehicle travels half the distance with speed v and the remaining distance with speed $2v$. Its average speed is

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

Ans. (1)

10. An ac source is connected to capacitor C . Due to decrease in its operating frequency :

- (1) displacement current decreases.
(2) capacitive reactance remains constant
(3) capacitive reactance decreases
(4) displacement current increases

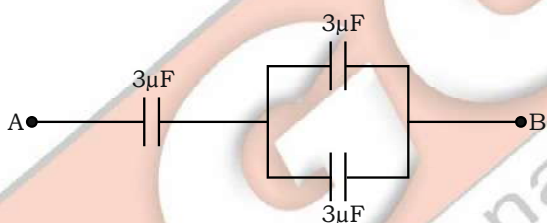
Ans. (1)

11. Light travels a distance x in time t_1 in air and $10x$ in time t_2 in another denser medium. What is the critical angle for this medium ?

- (1) $\sin^{-1}\left(\frac{t_1}{10t_2}\right)$ (2) $\sin^{-1}\left(\frac{10t_1}{t_2}\right)$
(3) $\sin^{-1}\left(\frac{t_2}{t_1}\right)$ (4) $\sin^{-1}\left(\frac{10t_2}{t_1}\right)$

Ans. (2)

12. The equivalent capacitance of the system shown in the following circuit is :



- (1) $6\mu\text{F}$ (2) $9\mu\text{F}$ (3) $2\mu\text{F}$ (4) $3\mu\text{F}$

Ans. (3)

13. The magnetic energy stored in an inductor of inductance $4\mu\text{H}$ carrying a current of 2A is :

- (1) 8mJ (2) $8\mu\text{J}$ (3) $4\mu\text{J}$ (4) 4mJ

Ans. (2)

14. A full wave rectifier circuit consists of two p-n junction diodes, a centre-tapped transformer, capacitor and a load resistance. Which of these components remove the ac ripple from the rectified output ?

- (1) Capacitor
(2) Load resistance
(3) A centre-tapped transformer
(4) p-n junction

Ans. (1)

15. In a plane electromagnetic wave travelling in free space, the electric field component oscillates sinusoidally at a frequency of $2.0 \times$

10^{10} Hz and amplitude 48 V m^{-1} . Then the amplitude of oscillating magnetic field is :

(Speed of light in free space = $3 \times 10^8\text{ ms}^{-1}$)

- (1) $1.6 \times 10^{-7}\text{ T}$ (2) $1.6 \times 10^{-6}\text{ T}$
(3) $1.6 \times 10^{-9}\text{ T}$ (4) $1.6 \times 10^{-8}\text{ T}$

Ans. (1)

16. The errors in the measurement which arise due to unpredictable fluctuations in temperature and voltage supply are :

- (1) Least count errors (2) Random errors
(3) Instrumental errors (4) Personal errors

Ans. (2)

17. Let a wire be suspended from the ceiling (rigid support) and stretched by a weight W attached at its free end. The longitudinal stress at any point of cross-sectional area A of the wire is :

- (1) $W/2A$ (2) Zero (3) $2W/A$ (4) W/A

Ans. (4)

18. Resistance of a carbon resistor determined from colour codes is $(22000 \pm 5\%) \Omega$. The colour of third band must be :

- (1) Orange (2) Yellow (3) Red (4) Green

Ans. (1)

19. The work functions of Caesium (Cs), Potassium (K) and Sodium (Na) are 2.14 eV , 2.30 eV and 2.75 eV respectively. If incident electromagnetic radiation has an incident energy of 2.20 eV , which of these photosensitive surfaces may emit photoelectrons ?

- (1) K only (2) Na only
(3) Cs only (4) Both Na and K

Ans. (3)

20. For Young's double slit experiment, two statements are given below :

Statement-I : If screen is moved away from the plane of slits, angular separation of the fringes remains constant.

Statement-II : If the monochromatic source is replaced by another monochromatic source of larger wavelength, the angular separation of fringes decreases.

In the light of the above statements, choose the correct answer from the options given below :

- (1) **Statement-I** is true but **Statement-II** is false
(2) **Statement-I** is false but **Statement-II** is true.
(3) Both **Statement-I** and **Statement-II** are true.
(4) Both **Statement-I** and **Statement-II** are false.

Ans. (1)

21. The half life of a radioactive substance is 20 minutes. In how much time, the activity of substance drops to $\left(\frac{1}{16}\right)^{\text{th}}$ of its initial value ?

- (1) 60 minutes (2) 80 minutes
(3) 20 minutes (4) 40 minutes

Ans. (2)

22. A football player is moving southward and suddenly turns eastward with the same speed to avoid an opponent. The force that acts on the player while turning is :

- (1) along north-east (2) along south-west
(3) along eastward (4) along northward

Ans. (1)

23. In hydrogen spectrum, the shortest wavelength in the Balmer series is λ . The shortest wavelength in the Bracket series ?

- (1) 9λ (2) 16λ (3) 2λ (4) 4λ

Ans. (4)

24. Two bodies of mass m and $9m$ are placed at a distance R . The gravitational potential on the line joining the bodies where the gravitational field equals zero, will be (G = gravitational constant) :

- (1) $-\frac{16Gm}{R}$ (2) $-\frac{20Gm}{R}$ (3) $-\frac{8Gm}{R}$ (4) $-\frac{12Gm}{R}$

Ans. (1)

25. The minium wavelength of X ray produced by an electron accelerated through a potential difference of V volts is proportional to :

- (1) $\frac{1}{\sqrt{V}}$ (2) V^2 (3) \sqrt{V} (4) $\frac{1}{V}$

Ans. (4)

26. The ratio of radius of gyration of a solid sphere of mass M and radius R about own axis to the radius of gyration of thin hollow sphere of same mass and radius about its axis is :

- (1) 2 : 5 (2) 5 : 2
(3) 3 : 5 (4) 5 : 3

Ans. (0) (Explanation: Answer should be $\sqrt{3/5}$. Root seems to be missing from option 3.)

27. A metal wire has mass $(0.4 \pm 0.002)\text{g}$, radius $(0.3 \pm 0.001)\text{mm}$ and length $(5 \pm 0.02)\text{cm}$. The maximum possible percentage error in the measurement of density will nearly be :

- (1) 1.6% (2) 1.4% (3) 1.2% (4) 1.3%

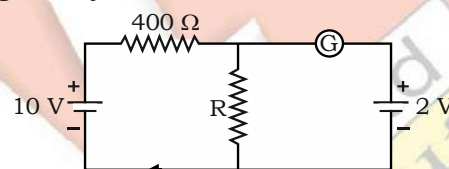
Ans. (1)

28. If $\oint \vec{E} \cdot d\vec{S} = 0$ over a surface, then :

- (1) all the charges must necessarily be inside the surface.
(2) the electric field inside the surface is necessarily uniform.
(3) the number of flux lines entering the surface must be equal to the number of flux lines leaving it.
(4) the magnitude of electric field on the surface is constant.

Ans. (3)

29. If the galvanometer G does not show any deflection in the circuit shown, the value of R is given by :



- (1) 100 Ω (2) 400 Ω (3) 200 Ω (4) 50 Ω

Ans. (1)

30. The potential energy of a long spring when stretched by 2 cm is U . If the spring is stretched by 8 cm, potential energy stored in it will be :

- (1) $8U$ (2) $16U$ (3) $2U$ (4) $4U$

Ans. (2)

31. A carnot engine has an efficiency of 50% when its source is at a temperature 327°C . The temperature of the sink is :

- (1) 100°C (2) 200°C (3) 27°C (4) 15°C

Ans. (3)

32. The angular acceleration of a body, moving along the circumference of a circle, is :

- (1) along the tangent to its position
(2) along the axis of rotation
(3) along the radius, away from centre
(4) along the radius towards the centre

Ans. (2)

33. The ratio of frequencies of fundamental harmonic produced by an open pipe to that of closed pipe having the same length is :

- (1) 1 : 3 (2) 3 : 1 (3) 1 : 2 (4) 2 : 1

Ans. (4)

34. A bullet is fired from a gun at the speed of 280ms^{-1} in the direction 30° above the horizontal. The maximum height attained by the bullet is ($g = 9.8\text{ms}^{-2}$, $\sin 30^\circ = 0.5$) :

- (1) 1000 m (2) 3000 m (3) 2800 m (4) 2000 m

Ans. (1)

GOALians Conquered many seats of **AIIMS** in **NEET - 2022**



SUNNY KR. SAH
AIIMS - NEW DELHI



AFSHAN MURTAZA
AIIMS - BHUBANESWAR



RAVI RANJAN
AIIMS - BHOPAL



AKASH KUMAR
AIIMS - BHOPAL



VIJETA
AIIMS - JODHPUR



ANAND KR. MANDAVI
AIIMS - RAIPUR



SALONI PRAKASH
AIIMS - PATNA



ASHISH KUMAR
AIIMS - PATNA



PAPPU KUMAR
AIIMS - PATNA



SAKSHI KUMARI
AIIMS - PATNA



SANDHYA
AIIMS - PATNA



PRAGATI KUMARI
AIIMS - GORAKHPUR



AJAY RAJ
AIIMS - GORAKHPUR



MANISH KUMAR
AIIMS - GORAKHPUR



ABHISHEK KR. JHA
AIIMS - GORAKHPUR



SAUMYA KUMARI
AIIMS - GORAKHPUR



SUPRIYA SINHA
AIIMS - GORAKHPUR



SANJAY BHARTI
AIIMS - GORAKHPUR



SAMARJEET KR. SANJEET
AIIMS - GORAKHPUR



DHARMESH KUMAR
AIIMS - GORAKHPUR



ANKIT KUMAR
AIIMS - HYDERABAD



ANNU BHARTI
AIIMS - RAI BARELI



ANJALI SINHA
AIIMS - RAI BARELI



ANSHU KUMAR
AIIMS - RAI BARELI



SAURABH KUMAR
AIIMS - KALYANI



RAHUL KUMAR
AIIMS - KALYANI



SUBHASH KR. RAY
AIIMS - DEOGHAR



SWARNA KUMARI
AIIMS - DEOGHAR



KAJAL KUMARI
AIIMS - DEOGHAR



SURAJ KUMAR
AIIMS - DEOGHAR

ADITYA ANAND
AIIMS - DEOGHAR



PUSHKAR RAJ
AIIMS - DEOGHAR



RUBY KUMARI
AIIMS - DEOGHAR



SOURABH RAJ
AIIMS - DEOGHAR



ISHIKA CHOUDHARY
AIIMS - DEOGHAR



SNEHA SINGH
AIIMS - GUWAHATI



ADITYA RAJ
AIIMS - GUWAHATI

DHIRAJ KUMAR
AIIMS - MADURAI

16000+
Doctors/Medics & Engineers

1.5 Lakh+
Satisfied Guardians

6156 Total Students Qualified
in NEET 2022

712 Total Students Got Admissions
in Govt. Medical College

35. An electric dipole is placed at an angle of 30° with an electric field of intensity $2 \times 10^5 \text{ NC}^{-1}$. It experiences a torque equal to 4 Nm . Calculate the magnitude of charge on the dipole, if the dipole length is 2 cm .

(1) 4 mC (2) 2 mC (3) 8 mC (4) 6 mC

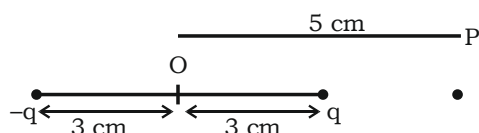
Ans. (2)

PHYSICS

SECTION-B

(Candidates can choose to attempt any 10 questions only)

36. An electric dipole is placed as shown in the figure,



The electric potential (in 10^2 V) at point P due to the dipole is (ϵ_0 = permittivity of free space

and $\frac{1}{4\pi\epsilon_0} = K$):

(1) $\left(\frac{8}{9}\right)qK$ (2) $\left(\frac{8}{3}\right)qK$ (3) $\left(\frac{3}{8}\right)qK$ (4) $\left(\frac{5}{8}\right)qK$

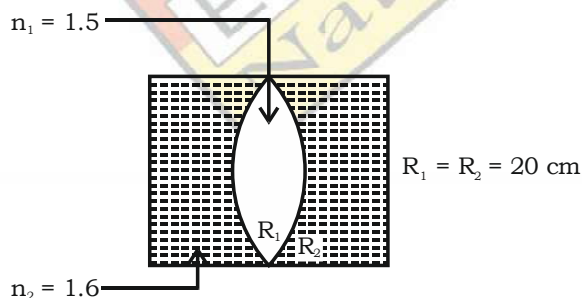
Ans. (3)

37. Two thin lenses are of same focal lengths (f), but one is convex and the other one is concave. When they are placed in contact with each other, the equivalent focal length of the combination will be:

(1) $f/2$ (2) infinite (3) Zero (4) $f/4$

Ans. (2)

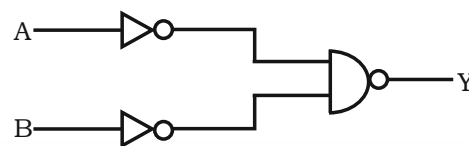
38. In the figure shown here, what is the equivalent focal length of the combination of lenses (Assume that all layers are thin)?



(1) -100 cm (2) -50 cm
(3) 40 cm (4) -40 cm

Ans. (1)

39. For the following logic circuit, the truth table is



(1)	A	B	Y	(2)	A	B	Y
	0	0	1		0	0	0
	0	1	0		0	1	0
	1	0	1		1	0	0
	1	1	0		1	1	1

(3)	A	B	Y	(4)	A	B	Y
	0	0	1		0	0	0
	0	1	1		0	1	1
	1	0	1		1	0	1
	1	1	0		1	1	1

Ans. (4)

40. The resistance of platinum wire at 0°C is 2Ω and 6.8Ω at 80°C . The temperature coefficient of resistance of the wire is:

(1) $3 \times 10^{-2} ^\circ\text{C}^{-1}$ (2) $3 \times 10^{-1} ^\circ\text{C}^{-1}$
(3) $3 \times 10^{-4} ^\circ\text{C}^{-1}$ (4) $3 \times 10^{-3} ^\circ\text{C}^{-1}$

Ans. (1)

41. A horizontal bridge is built across a river. A student standing on the bridge throws a small ball vertically upwards with a velocity 4ms^{-1} . The ball strikes the water surface after 4s . The height of bridge above water surface is (Take $g = 10 \text{ ms}^{-2}$):

(1) 64 m (2) 68 m
(3) 56 m (4) 60 m

Ans. (1)

42. A satellite is orbiting just above the surface of the earth with period T . If d is the density of the earth and G is the universal constant of

gravitation, the quantity $\frac{3\pi}{Gd}$ represents:

(1) T^3 (2) \sqrt{T} (3) T (4) T^2

Ans. (4)

43. The radius of inner most orbit of hydrogen atom is $5.3 \times 10^{-11} \text{ m}$. What is the radius of third allowed orbit of hydrogen atom?

(1) 1.59 \AA (2) 4.77 \AA
(3) 0.53 \AA (4) 1.06 \AA

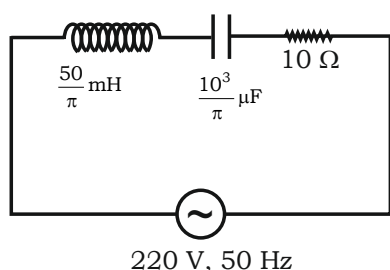
Ans. (2)

44. A wire carrying a current I along the positive x -axis has length L . It is kept in a magnetic field $\vec{B} = (2\hat{i} + 3\hat{j} - 4\hat{k})\text{ T}$. The magnitude of the magnetic force acting on the wire is:

(1) $5 IL$ (2) $\sqrt{3} IL$ (3) $3 IL$ (4) $\sqrt{5} IL$

Ans. (1)

45. The net impedance of circuit (as shown in figure) will be:



(1) $5\sqrt{5}\Omega$ (2) 25Ω (3) $10\sqrt{2}\Omega$ (4) 15Ω

Ans. (1)

46. 10 resistors, each of resistance R are connected in series to a battery of emf E and negligible internal resistance. Then those are connected in parallel to the same battery, the current is increased n -times. The value of n is:

(1) 1 (2) 1000 (3) 10 (4) 100

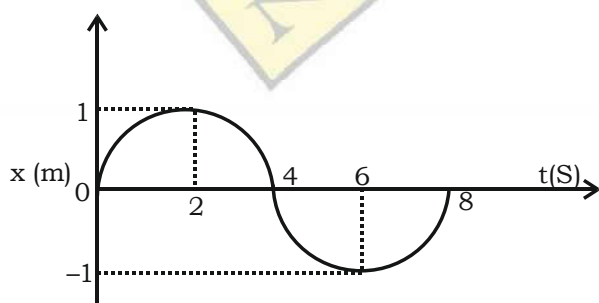
Ans. (4)

47. Calculate the maximum acceleration of a moving car so that a body lying on the floor of the car remains stationary. The coefficient of static friction between the body and the floor is 0.15 ($g = 10\text{ ms}^{-2}$)

(1) 1.5 ms^{-2} (2) 50 ms^{-2}
(3) 1.2 ms^{-2} (4) 150 ms^{-2}

Ans. (1)

48. The x - t graph of a particle performing simple harmonic motion is shown in the figure. The acceleration of the particle at $t = 2\text{ s}$ is:



(1) $\frac{\pi^2}{16}\text{ ms}^{-2}$ (2) $-\frac{\pi^2}{16}\text{ ms}^{-2}$
(3) $\frac{\pi^2}{8}\text{ ms}^{-2}$ (4) $-\frac{\pi^2}{8}\text{ ms}^{-2}$

Ans. (2)

49. A bullet from a gun is fired on a rectangular wooden block with velocity u . When bullet travels 24 cm through the block along its length

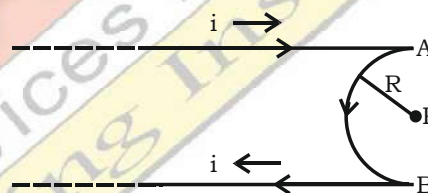
horizontally, velocity of bullet becomes $\frac{u}{3}$. Then

it further penetrates into the block in the same direction before coming to rest exactly at the other end of the block. The total length of the block is:

(1) 28 cm (2) 30 cm (3) 27 cm (4) 24 cm

Ans. (3)

50. A very long conducting wire is bent in a semi-circular shape from A to B as shown in figure. The magnetic field at point P for steady current configuration is given by:



(1) $\frac{\mu_0 i}{4R} \left[1 - \frac{2}{\pi} \right]$ pointed away from page
(2) $\frac{\mu_0 i}{4R} \left[1 - \frac{2}{\pi} \right]$ pointed into the page
(3) $\frac{\mu_0 i}{4R}$ pointed into the page
(4) $\frac{\mu_0 i}{4R}$ pointed away from the page.

Ans. (1)

CHEMISTRY SECTION-A

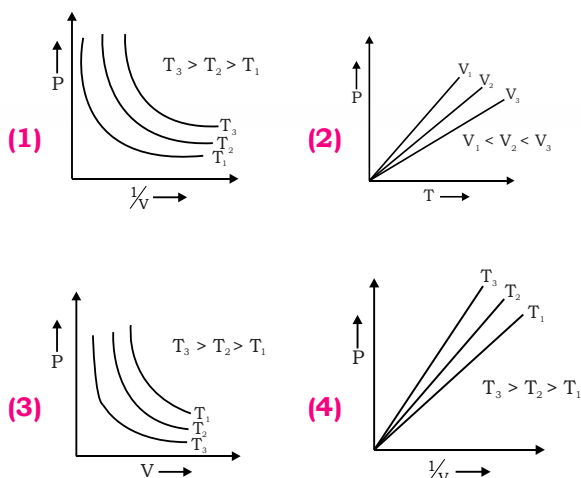
(All questions are compulsory)

51. Amongst the given options which of the following molecules/ion acts as a Lewis acid?

(1) BF_3 (2) OH^- (3) NH_3 (4) H_2O

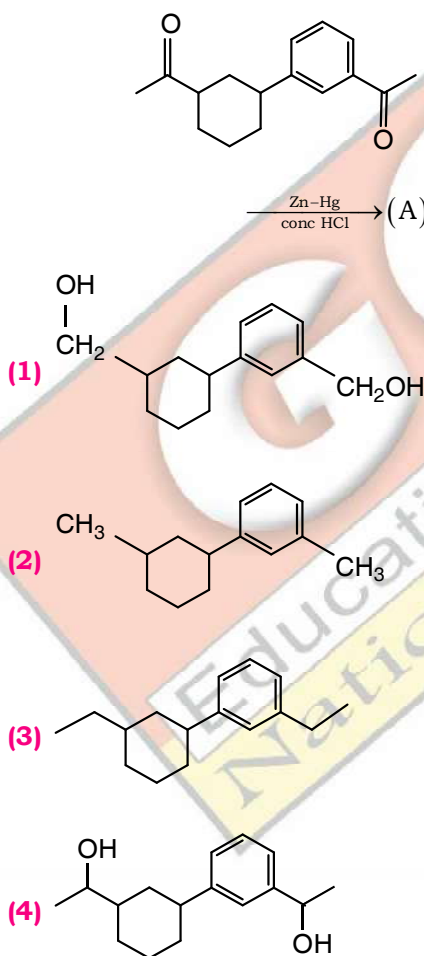
Ans. (1)

52. Which amongst the following options is correct graphical representation of Boyle's Law?



Ans. (4)

53. Identify product (A) in the following reaction :



Ans. (3)

54. Which of the following statements are **NOT** correct?

A. Hydrogen is used to reduce heavy metal oxides to metals.

- B. Heavy water is used to study reaction mechanism.
C. Hydrogen is used to make saturated fats from oils.
D. The H-H bond dissociation enthalpy is lowest as compared to a single bond between two atoms of any element.
E. Hydrogen reduces oxides of metals that are more active than iron.

Choose the **most appropriate** answer from the options given below :

- (1) D, E only (2) A, B, C only
(3) B, C, D, E only (4) B, D only

Ans. (1)

55. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : In equation $\Delta_r G \equiv -nFE_{\text{cell}}$ value of $\Delta_r G$ depends on n.

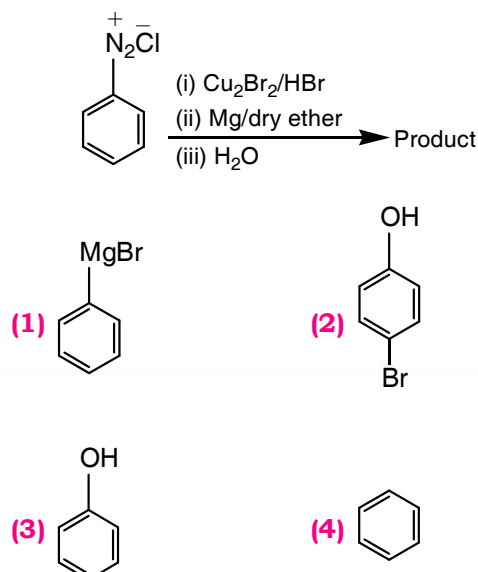
Reason R : E_{cell} is an intensive property and $\Delta_r G$ is an extensive property.

In the light of the above statements, 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 and **R** is NOT the correct explanation of **A**.

Ans. (3)

56. Identify the product in the following reaction :



Ans. (4)

57. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : Helium is used to dilute oxygen in diving apparatus.

Reason R : Helium has high solubility in O_2 .

In the light of the above statements, 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 and **R** is NOT the correct explanation of **A**.

Ans. (1)

58. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : A reaction can have zero activation energy.

Reason R : The minimum extra amount of energy absorbed by reactant molecules so that their energy becomes equal to threshold value is called activation energy.

In the light of the above statements, 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 and **R** is NOT the correct explanation of **A**.

Ans. (4)

59. Weight (g) of two moles of the organic compound, which is obtained by heating sodium ethanoate with sodium hydroxide in presence of calcium oxide is :

- (1) 30 (2) 18
(3) 16 (4) 32

Ans. (4)

60. Amongst the following, the total number of species NOT having eight electrons around central atom in its outer most shell, is NH_3 , $AlCl_3$, $BeCl_2$, CCl_4 , PCl_5 :

- (1) 4 (2) 1 (3) 3 (4) 2

Ans. (3)

61. The relation between n_m , (n_m = the number of permissible values of magnetic quantum number (m)) for a given value of azimuthal quantum number (l), is

- (1) $n_m = 2l^2 + 1$ (2) $n_m = l + 2$
(3) $l = \frac{n_m - 1}{2}$ (4) $l = 2n_m + 1$

Ans. (3)

62. Which of the following reactions will NOT give primary amine as the product?

- (1) $CH_3NC \xrightarrow[(ii) H_3O^+]{(i) LiAlH_4} \text{Product}$
(2) $CH_3CONH_2 \xrightarrow[(ii) H_3O^+]{(i) LiAlH_4} \text{Product}$
(3) $CH_3CONH_2 \xrightarrow{Br_2/KOH} \text{Product}$
(4) $CH_3CN \xrightarrow[(ii) H_3O^+]{(i) LiAlH_4} \text{Product}$

Ans. (1)

63. Homoleptic complex from the following complexes is :

- (1) Pentaamminecarbonatocobalt (III) chloride
(2) Triamminetriaquachromium (III) chloride
(3) Potassium trioxalatoaluminate (III)
(4) Diamminechloridonitrito - N- platinum (II)

Ans. (3)

64. Some tranquilizers are listed below. Which one from the following belongs to barbiturates?

- (1) Valium (2) Veronal
(3) Chlordiazepoxide (4) Meprobamate

Ans. (2)

65. Which amongst the following molecules on polymerization produces neoprene?

- (1) $H_2C = CH - C \equiv CH$ (2) $H_2C = C - CH = CH_2$
(3) $H_2C = CH - CH - CH_2$ (4) $H_2C = C - CH = CH_2$

Ans. (4)

66. The right option for the mass of CO_2 produced by heating 20 g of 20% pure limestone is (Atomic mass of Ca = 40)

- $[CaCO_3 \xrightarrow{1200 K} CaO + CO_2]$
(1) 2.64 g (2) 1.32 g
(3) 1.12 g (4) 1.76 g

Ans. (4)

67. Which one of the following statements is correct?

- (1) The bone in human body is an inert and unchanging substance
- (2) Mg plays roles in neuromuscular function and interneuronal transmission.
- (3) The daily requirement of Mg and Ca in the human body is estimated to be 0.2 – 0.3 g.
- (4) All enzymes that utilise ATP in phosphate transfer require Ca as the cofactor.

Ans. (3)

68. Match List - I with List - II :

List - I	List - II
A. Coke	I. Carbond atoms are sp^3 hybridised
B. Diamond	II. Used as a dry lubricant
C. Fullerene	III. Used as a reducing agent
D. Graphite	IV. Cage like molecules

Choose the **correct** answer from the options given below :

- (1) A – III, B – I, C – IV, D – II
- (2) A – III, B – IV, C – I, D – II
- (3) A – II, B – IV, C – I, D – III
- (4) A – IV, B – I, C – II, D – III

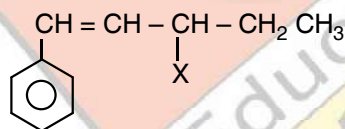
Ans. (1)

69. The stability of Cu^{2+} is more than Cu^+ salts in aqueous solution due to

- (1) hydration energy
- (2) second ionisation enthalpy
- (3) first ionisation enthalpy
- (4) enthalpy of atomization.

Ans. (1)

70. The given compound



is an example of _____.

- (1) allylic halide
- (2) vinylic halide
- (3) benzylic halide
- (4) aryl halide

Ans. (1)

71. Given below are two statements :

Statement I : A unit formed by the attachment of a base to 1' position of sugar is known as nucleoside

Statement II : When nucleoside is linked to phosphorous acid at 5' - position of sugar moiety, we get nucleotide.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Statement I is true but Statement II is false.
- (2) Statement I is false but Statement II is true.
- (3) Both Statement I and Statement II are true.
- (4) Both Statement I and Statement II are false.

Ans. (1)

72. In Lassaigne's extract of an organic compound, both nitrogen and sulphur are present, which gives blood red colour with Fe^{3+} due to the formation of -

- (1) $[Fe(CN)_5 NOS]^{4-}$
- (2) $[Fe(SCN)]^{2+}$
- (3) $Fe_4[Fe(CN)_6]_3 \cdot xH_2O$
- (4) NaSCN

Ans. (2)

73. The number of σ bonds, π bond and lone pair of electrons in pyridine, respectively are :

- (1) 11, 3, 1
- (2) 12, 2, 1
- (3) 11, 2, 0
- (4) 12, 3, 0

Ans. (1)

74. A compound is formed by two elements A and B. The element B forms cubic close packed structure and atoms of A occupy $1/3$ of tetrahedral voids. If the formula of the compound is A_xB_y , then the value of $x + y$ is in option

- (1) 3
- (2) 2
- (3) 5
- (4) 4

Ans. (3)

75. The correct order of energies of molecular orbitals of N_2 molecule, is :

- (1) $\sigma 1s < \sigma^* 1s < \sigma 2s < \sigma^* 2s < \sigma 2p_z < \sigma^* 2p_z < (\pi 2p_x = \pi 2p_y) < (\pi^* 2p_x = \pi^* 2p_y)$
- (2) $\sigma 1s < \sigma^* 1s < \sigma 2s < \sigma^* 2s < (\pi 2p_x = \pi 2p_y) < (\pi^* 2p_x = \pi^* 2p_y) < \sigma 2p_z < \sigma^* 2p_z$
- (3) $\sigma 1s < \sigma^* 1s < \sigma 2s < \sigma^* 2s < (\pi 2p_x = \pi 2p_y) < \sigma 2p_z < (\pi^* 2p_x = \pi^* 2p_y) < \sigma^* 2p_z$
- (4) $\sigma 1s < \sigma^* 1s < \sigma 2s < \sigma^* 2s < \sigma 2p_z < (\pi 2p_x = \pi 2p_y) < (\pi^* 2p_x = \pi^* 2p_y) < \sigma^* 2p_z$

Ans. (3)

76. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : Metallic sodium dissolves in liquid ammonia giving a deep blue solution. which is paramagnetic.

Reasons R : The deep blue solution is due to the formation of amide.

In the light of the above statements, 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 and **R** is **NOT** the correct explanation of **A**.

Ans. (1)

77. Which one is an example of heterogenous catalysis?

- (1) Decomposition of ozone in presence of nitrogen monoxide.
- (2) Combination between dinitrogen and dihydrogen to form ammonia in the presence of finely divided iron.
- (3) Oxidation of sulphur dioxide into sulphur trioxide in the presence of oxides of nitrogen.
- (4) Hydrolysis of sugar catalysed by H^+ ions.

Ans. (2)

78. For a certain reaction, the rate = $k[A]^2[B]$, when the initial concentration of A is tripled keeping concentration of B constant, the initial rate would

- (1) increase by a factor of nine.
- (2) increase by a factor of three
- (3) decrease by a factor of nine.
- (4) increase by a factor of six.

Ans. (1)

79. Select the **correct** statements from the following:

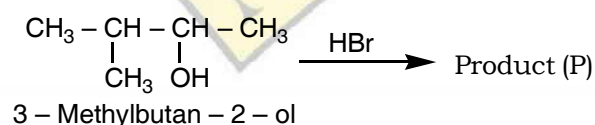
- A. Atoms of all elements are composed of two fundamental particles.
- B. The mass of the electron is $9.10939 \times 10^{-31} \text{ kg}$.
- C. All the isotopes of a given element show same chemical properties.
- D. Protons and electrons are collectively known as nucleons.
- E. Dalton's atomic theory, regarded the atom as an ultimate particle of matter.

Choose the correct answer from the options given below :

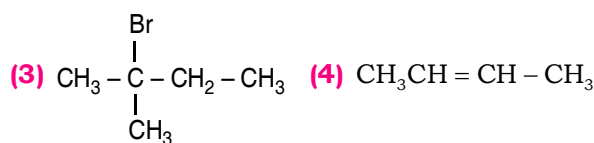
- (1) A and E only
- (2) B, C and E only
- (3) A, B and C only
- (4) C, D and E only

Ans. (2)

80. Consider the following reaction and identify the product (P).



- (1) $\text{CH}_3 - \text{CH} - \text{CH} - \text{CH}_3$
 - (2) $\text{CH}_3 - \text{C} - \text{CH}_2 \text{ Br}$
- $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 \quad \text{Br} \end{array}$ $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$



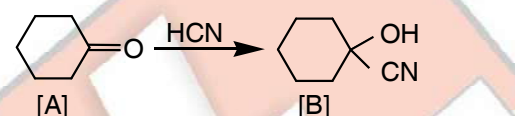
Ans. (3)

81. Taking stability as the factor, which one of the following represents **correct** relationship?

- (1) $\text{AlCl} > \text{AlCl}_3$
- (2) $\text{TlI} > \text{TlI}_3$
- (3) $\text{TlCl}_3 > \text{TlCl}$
- (4) $\text{InI}_3 > \text{InI}$

Ans. (2)

82. Complete the following reaction :



[C] is _____.

- (1) Cyclohexanecarbaldehyde
- (2) Cyclohexanecarboxylic acid
- (3) Cyclohexanol
- (4) Cyclohexanecarboxylic acid

Ans. (2)

83. The conductivity of equimolar solution of KCl at 25°C is $0.0210 \text{ ohm}^{-1} \text{ cm}^{-1}$ and the resistance of the cell containing the solution at 25°C is 60 ohm. The value of cell constant is:

- (1) 1.26 cm^{-1}
- (2) 3.34 cm^{-1}
- (3) 1.34 cm^{-1}
- (4) 3.28 cm^{-1}

Ans. (1)

84. The element expected to form largest ion to achieve the nearest noble gas configuration is

- (1) N
- (2) Na
- (3) O
- (4) F

Ans. (1)

85. Intermolecular forces are forces of attraction and repulsion between interacting particles that will include :

- A. dipole - dipole forces.
- B. dipole - induced dipole forces.
- C. hydrogen - bonding .
- D. covalent bonding.
- E. dispersion forces.

Choose the **most appropriate** answer from the options given below :

- (1) A, B, C, E are correct
- (2) A, C, D, E are correct
- (3) B, C, D, E are correct
- (4) A, B, C, D are correct

Ans. (1)

CHEMISTRY

SECTION-B

(Candidates can choose to attempt any 10 questions only)

86. The reaction that does NOT take place in a blast furnace between 900 K to 1500 K temperature range during extraction of iron is :

- (1) $C + CO_2 \rightarrow 2CO$
- (2) $CaO + SiO_2 \rightarrow CaSiO_3$
- (3) $Fe_2O_3 + CO \rightarrow 2FeO + CO_2$
- (4) $FeO + CO \rightarrow Fe + CO_2$

Ans. (3)

87. Match List-I with List-II

List-I (Oxoacids of Sulphur)

List-II (Bonds)

- | | |
|---------------------------|--------------------------------------|
| A. Peroxodisulphuric acid | I. Two S-OH, Four S=O, One S-O-S |
| B. Sulphuric acid | II. Two S-OH, One S=O |
| C. Pyrosulphuric acid | III. Two S-OH, Four S=O, One S-O-O-S |
| D. Sulphurous acid | IV. Two S-OH, Two S=O |

Choose the correct answer from the options given below :

- (1) A-I, B-III, C-IV, D-IV
- (2) A-III, B-IV, C-II, D-I
- (3) A-I, B-III, C-II, D-IV
- (4) A-III, B-IV, C-I, D-II

Ans. (4)

88. Pumice stone is an example of :

- (1) Solid sol
- (2) Foam
- (3) sol
- (4) gel

Ans. (1)

89. Given below are two statements :

Statement-I : The nutrient deficient water bodies lead to eutrophication.

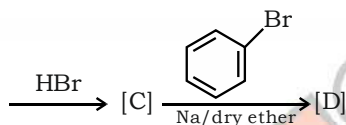
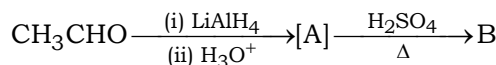
Statement-II : Eutrophication leads to decrease in the level of oxygen in the water bodies.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Statement-I is correct but Statement-II is false
- (2) Statement-I is incorrect but Statement-II is true.
- (3) Both Statement-I and Statement-II are true.
- (4) Both Statement-I and Statement II are false.

Ans. (2)

90. Identify the final product [D] obtained the following sequence of reactions.

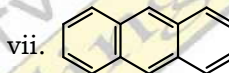
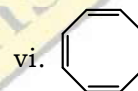
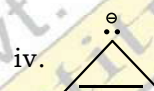
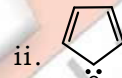
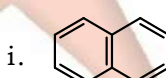


- (1) C_4H_{10}
- (2) $HC \equiv C^{\ominus}Na^+$

- (3)
- (4)

Ans. (3)

91. Consider the following compounds/species :

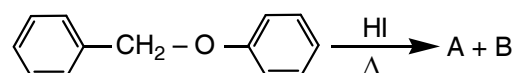


The number of compounds/species which obey Huckel's rule is ____.

- (1) 2
- (2) 5
- (3) 4
- (4) 6

Ans. (3)

92. Consider the following reaction :



Identify products A and B.

- (1) $A = \text{C}_6\text{H}_5\text{CH}_2\text{I}$ and $B = \text{C}_6\text{H}_5\text{OH}$

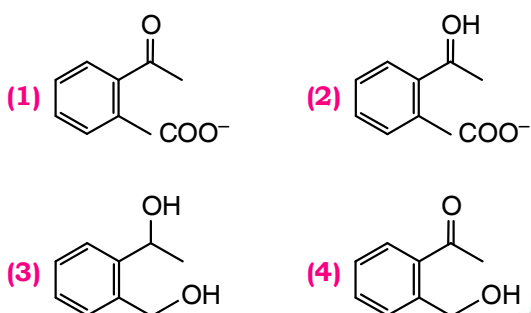
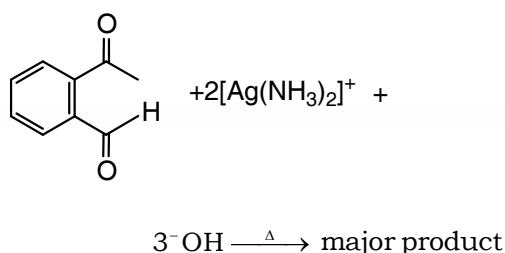
- (2) $A = \text{C}_6\text{H}_5\text{CH}_3$ and $B = \text{C}_6\text{H}_5\text{I}$

- (3) $A = \text{C}_6\text{H}_5\text{CH}_3$ and $B = \text{C}_6\text{H}_5\text{OH}$

- (4) $A = \text{C}_6\text{H}_5\text{CH}_2\text{OH}$ and $B = \text{C}_6\text{H}_5\text{I}$

Ans. (1)

93. Identify the major product obtained in the following reaction :



Ans. (1)

94. Which complex compound is most stable?

- (1) $[\text{CoCl}_2(\text{en})_2]\text{NO}_3$
 (2) $[\text{Co}(\text{NH}_3)_6_2(\text{SO}_4)_3]$
 (3) $[\text{Co}(\text{NH}_3)_4(\text{H}_2\text{O})\text{Br}](\text{NO}_3)_2$
 (4) $[\text{Co}(\text{NH}_3)_3(\text{NO}_3)_3]$

Ans. (1)

95. The equilibrium concentrations of the species

in the reaction $\text{A} + \text{B} \rightleftharpoons \text{C} + \text{D}$ are 2, 3, 10 and 6 mol L^{-1} , respectively at 300 K, ΔG° for the reaction is ($R = 2 \text{ cal/mol K}$)

- (1) -1381.80 cal (2) -13.73 cal
 (3) 1372.60 cal (4) -137.26 cal

Ans. (1)

96. What fraction of one edge centred octahedral voids lies in one unit cell of fcc ?

- (1) $\frac{1}{4}$ (2) $\frac{1}{12}$ (3) $\frac{1}{2}$ (4) $\frac{1}{3}$

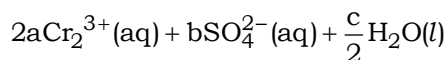
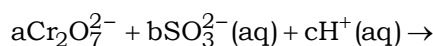
Ans. (1)

97. Which amongst the following options is the correct relation between change in enthalpy and change in internal energy ?

- (1) $\Delta H - \Delta U = -\Delta nRT$ (2) $\Delta H + \Delta U = \Delta nR$
 (3) $\Delta H = \Delta U - \Delta n_gRT$ (4) $\Delta H - \Delta U + \Delta n_gRT$

Ans. (4)

98. On balancing the given redox reaction.



the coefficients a, b and c are found to be, respectively-

- (1) 1, 8, 3 (2) 8, 1, 3
 (3) 1, 3, 8 (4) 3, 8, 1

Ans. (3)

99. Which of the following statements are INCORRECT?

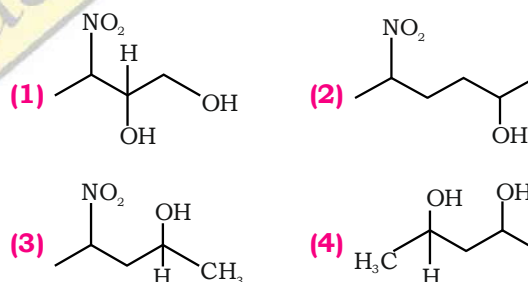
- A. All the transition metals except scandium form MO oxides which are ionic.
 B. The highest oxidation number corresponding to the group number in transition metal oxides is attained in Sc_2O_3 to Mn_2O_7 .
 C. Basic character increases from V_2O_3 to V_2O_5 .
 D. V_2O_4 dissolves in acids to give VO_4^{3-} salts.
 E. CrO is basic but Cr_2O_3 is amphoteric.

Choose the correct answer from the option given below :

- (1) C and D only (2) B and C only
 (3) A and E only (4) B and D only

Ans. (1)

100. Which amongst the following will be most readily dehydrated under acidic conditions ?



Ans. (2)

BOTANY

SECTION-A

(All questions are compulsory)

101. In tissue culture experiments, leaf mesophyll cells are put in a culture medium to form callus. This phenomenon may be called is :

- (1) Development (2) Senescence
 (3) Differentiation (4) Dedifferentiation

Ans. (4)

102. In the equation

$$\boxed{GPP - R = NPP}$$

GPP is Gross Primary Productivity

NPP is Net Primary Productivity

R here is _____.

- (1) Respiratory loss
- (2) Reproductive allocation
- (3) Photosynthetically active radiation
- (4) Respiratory quotient

Ans. (1)

103. Given below are two statements :

Statement I : The forces generated by transpiration can lift a xylem-sized column of water over 130 meters height.

Statement II : Transpiration cools leaf surfaces sometimes 10 to 15 degrees, by evaporative cooling.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (1) **Statement I** is correct but **Statement II** is incorrect.
- (2) **Statement I** is incorrect but **Statement II** is correct.
- (3) Both **Statement I** and **Statement II** are correct.
- (4) Both **Statement I** and **Statement II** are incorrect.

Ans. (3)

104. In angiosperm the haploid, drophid and triploid structures of a fertilized embryo sac sequentially are :

- (1) Synergids, Zygote and Primary endosperm nucleus
- (2) Synergids, antipodal and Polar nucleus
- (3) Synergids, Primary endosperm nucleus and zygote
- (4) Antipodals, synergids and primary endosperm nucleus

Ans. (1)

105. Given below are two statements.

Statement I : Endarch and exarch are the terms often used for describing the position of secondary xylem in the plant body.

Statement II : Exarch condition is the most common feature of the root system.

In the light of the above statements, choose the **correct** answer from the options given below :

- (1) **Statement I** is correct but **Statement II** is incorrect.
- (2) **Statement I** is incorrect but **Statement II** is correct.

(3) Both **Statement I** and **Statement II** are correct.

(4) Both **Statement I** and **Statement II** are incorrect.

Ans. (2)

106. How many ATP and NADPH₂ are required for the synthesis of one molecule of glucose during Calvin cycle ?

- (1) 12 ATP and 16 NADPH₂
- (2) 18 ATP and 16 NADPH₂
- (3) 12 ATP and 12 NADPH₂
- (4) 18 ATP and 12 NADPH₂

Ans. (4)

107. Spraying of which of the following phytohormone on juvenile conifers helps in hastening the maturity period, that leads to early seed production ?

- (1) Zeatin
- (2) Absciscic Acid
- (3) Indole-3-butyric Acid
- (4) Gibberellic Acid

Ans. (4)

108. Among eukaryotes, replication of DNA takes place in :

- (1) G₁ phase
- (2) G₂ phase
- (3) M phase
- (4) S phase

Ans. (4)

109. Identify the **correct** statements :

- A. Detrivores perform fragmentation.
- B. The humus is further degraded by some microbes during mineralization.
- C. Water soluble inorganic nutrients go down into the soil and get precipitated by a process called leaching.
- D. The detritus food chain begins with living organisms.
- E. Earthworms break down detritus into smaller particles by a process called catabolism.

Choose the correct answer from the options given below.

- (1) C, D, E only
- (2) D, E, A only
- (3) A, B, C only
- (4) B, C, D only

Ans. (3)

110. Identify the pair of heterosporous pteridophytes among the following :

- (1) *Psilotum* and *Salvinia*
- (2) *Equisetum* and *Salvinia*
- (3) *Lycopodium* and *Selaginella*
- (4) *Selaginella* and *Salvinia*

Ans. (4)



Be a part of **100%** result Oriented Campus.
GOAL EDUCATION VILLAGE Entrance test on 07th August, 2022



AC Integrated **LIBRARY**



Healthy & Hygienic **FOOD**



Daily **FITNESS** Session



INTERACTIVE session



Well Equipped **CLASSROOMS**



First Preparatory Institute of Eastern India
spread over 14 Acres of land with all the
essential amenities to provide the best
education under one campus.

HEALTH care



TRANSPORT system



111. Given below are two statements : One is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : ATP is used at two steps in glycolysis.

Reason R : First ATP is used in converting glucose into glucose-6-phosphate and second ATP is used in conversion of fructose-6-phosphate into fructose-1-6-diphosphate.

In the light of the above statements, 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 **R** is NOT the correct explanation of **A**.

Ans. (3)

112. Among 'The Evil Quartet', Which one is considered the most important cause driving extinction of species ?

- (1) Alien species invasions
- (2) Co-extinctions
- (3) Habitat loss and fragmentation
- (4) Over exploitation for economic gain

Ans. (3)

113. Unequivocal proof that DNA is the genetic material was first proposed by :

- (1) Avery, Macleoid and Mc Carthy
- (2) Wilkins and Franklin
- (3) Frederick Griffith
- (4) Alfred Hershey and Martha Chase

Ans. (4)

114. The thickness of ozone in a column of air in the atmosphere is measured in terms of :

- (1) Decameter (2) Kilobase
- (3) Dobson units (4) Decibels

Ans. (3)

115. Which micronutrient is required for splitting of water molecule during photosynthesis ?

- (1) Magnesium (2) Copper
- (3) Manganese (4) Molybdenum

Ans. (3)

116. Family Fabaceae differs from Solanaceae and Liliaceae. With respect to the stamens, pick out the characteristics specific to family Fabaceae but not found in Solanaceae or Liliaceae.

- (1) Monadelphous and Monotheous anthers
- (2) Epiphyllous and Ditheous anthers

(3) Diadelphous and Ditheous anthers

(4) Polyadelphous and epipetalous stamens

Ans. (3)

117. Given below are two statements : One is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : The first stage of gametophyte in the life cycle of moss is protonema stage.

Reason R : Protonema develops directly from spores produced in capsule.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (1) **A** is correct but **R** is not correct.
- (2) **A** is not correct but **R** is correct.
- (3) Both **A** and **R** are correct and **R** is the correct explanation of **A**.
- (4) Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**.

Ans. (3)

118. Expressed Sequence Tags (ESTs) refers to :

- (1) All genes whether expressed or unexpressed.
- (2) Certain important expressed genes.
- (3) All genes that are expressed as RNA
- (4) All genes that are expressed as proteins.

Ans. (3)

119. Frequency of recombination between gene pairs on same chromosome as a measure of the distance between genes to map their position on chromosome, was used for the first time by :

- (1) Alfred Sturtevant
- (2) Henking
- (3) Thomas Hunt Morgan
- (4) Sutton and Boveri

Ans. (1)

120. Large, colourful, fragrant flowers with nectar are seen in :

- (1) bat pollinated plants
- (2) wind pollinated plants
- (3) insect pollinated plants
- (4) bird pollinated plants

Ans. (3)

121. Movement and accumulation of ions across a membrane against their concentration gradient can be explained by :

- (1) Passive Transport (2) Active Transport
- (3) Osmosis (4) Facilitated Diffusion

Ans. (2)

122. Upon exposure to UV radiation, DNA stained with ethidium bromide will show :

- (1) Bright yellow colour
- (2) Bright orange colour
- (3) Bright red colour
- (4) Bright blue colour

Ans. (2)

123. Given below are two statements : One is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : Late wood has fewer xylar elements with narrow vessels.

Reason R : Cambium is less active in winters.

In the light of the above statements, 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 **R** is NOT the correct explanation of **A**.

Ans. (3)

124. Axile placentation is observed in :

- (1) Tomato, Dianthus and Pea
- (2) China rose, Petunia and lemon
- (3) Mustard, Cucumber and Primrose
- (4) China rose, Beans and Lupin

Ans. (2)

125. The phenomenon of pleiotropism refers to :

- (1) a single gene affecting multiple phenotypic expression.
- (2) more than two genes affecting a single character.
- (3) presence of several alleles of a single gene controlling a single crossover.
- (4) presence of two alleles each of the two genes controlling a single trait.

Ans. (1)

126. During the purification process for recombinant DNA technology, addition of chilled ethanol precipitates out.

- (1) Histones
- (2) Polysaccharides
- (3) RNA
- (4) DNA

Ans. (4)

127. Which hormone promotes internode/petiole elongation in deep water rice ?

- (1) Ethylene
- (2) 2, 4-D
- (3) GA_3
- (4) Kinetin

Ans. (1)

128. The process of appearance of recombination nodules occurs at which sub stage of prophase I in meiosis ?

- (1) Diplotene
- (2) Diakinesis
- (3) Zygotene
- (4) Pachytene

Ans. (4)

129. What is the role of RNA polymerase III in the process of transcription in Eukaryotes ?

- (1) Transcription of precursor of mRNA
- (2) Transcription of only snRNAs
- (3) Transcription of rRNAs (28S, 18S and 5.8S)
- (4) Transcription of tRNA, 5 srRNA and snRNA

Ans. (4)

130. What is the function of tassels in the corn cob ?

- (1) To disperse pollen grains
- (2) To protect seeds
- (3) To attract insects
- (4) To trap pollen grains

Ans. (4)

131. In gene gun method used to introduce alien DNA into host cells, microparticles of _____ metal are used.

- (1) Tungsten or gold
- (2) Silver
- (3) Copper
- (4) Zinc

Ans. (1)

132. Cellulose does not form blue colour with Iodine because :

- (1) It does not contain complex helices and hence cannot hold iodine molecules.
- (2) It breaks down when iodine reacts with it.
- (3) It is a disaccharide.
- (4) It is a helical molecule.

Ans. (1)

133. Which of the following stages of meiosis involves division of centromere ?

- (1) Anaphase II
- (2) Telophase
- (3) Metaphase I
- (4) Metaphase II

Ans. (1)

134. The reaction centre in PS II has an absorption maxima at :

- (1) 660 nm
- (2) 780 nm
- (3) 680 nm
- (4) 700 nm

Ans. (3)

135. The historic Convention on Biological Diversity, 'The Earth Summit' was held in Rio de Janeiro in the year :

- (1) 1986
- (2) 2002
- (3) 1985
- (4) 1992

Ans. (4)

BOTANY

SECTION-B

(Candidates can choose to attempt any 10 questions only)

136. Match **List I** with **List II** :

List I

List II

- | | |
|-------------------------|---|
| A. M phase | I. Proteins are synthesized |
| B. G ₂ phase | II. Inactive phase |
| C. Quiescent stage | III. Interval between mitosis and initiation of DNA replication |
| D. G ₁ phase | IV. Equational division |

Choose the correct answer from the options given below :

- (1) A-IV, B-I, C-II, D-III (2) A-II, B-IV, C-I, D-III
(3) A-III, B-II, C-IV, D-I (4) A-IV, B-II, C-I, D-III

Ans. (1)

137. Given below are two statements :

Statement I : Gause's 'Competitive Exclusion Principle' states that two closely related species competing for the same resources cannot co-exist indefinitely and competitively inferior one will be eliminated eventually.

Statement II : In general, carnivores are more adversely affected by competition than herbivores.

In the light of the above statements, choose the correct answer from the options given below :

- (1) **Statement I** is correct but **II** is incorrect.
(2) **Statement I** is incorrect but **II** is correct.
(3) Both **Statement I** and **II** are correct.
(4) Both **Statement I** and **II** are incorrect.

Ans. (1)

138. How many different proteins does the ribosome consist of ?

- (1) 40 (2) 20 (3) 80 (4) 60

Ans. (3)

139. Match **List I** with **List II** :

List I

List II

- | | |
|------------------------------|--------------------------------|
| A. Oxidative decarboxylation | I. Citrate synthase |
| B. Glycolysis | II. Pyruvate dehydrogenase |
| C. Oxidative phosphorylation | III. Electron transport system |
| D. Tricarboxylic acid cycle | IV. EMP pathway |

Choose the correct answer from the options given below :

- (1) A-III, B-I, C-II, D-IV (2) A-II, B-IV, C-III, D-I
(3) A-III, B-IV, C-II, D-I (4) A-II, B-IV, C-I, D-III

Ans. (2)

140. Which of the following statements are correct about Klinefelter's Syndrome ?

- A. This disorder was first described by Langdon Down (1866)
B. Such an individual has overall masculine development. However, the feminine development is also expressed.
C. The affected individual is short statured.
D. Physical, psychomotor and mental development is retarded.
E. Such individuals are sterile.

Choose the **correct** answer from the options given below :

- (1) B and E only (2) A and E only
(3) A and B only (4) C and D only

Ans. (1)

141. Melonate inhibits the growth of pathogenic bacteria by inhibiting the activity of :

- (1) Lipase
(2) Dinitrogenase
(3) Succinic dehydrogenase
(4) Amylase

Ans. (3)

142. Which of the following combinations is required for chemiosmosis ?

- (1) proton pump, electron gradient, ATP synthase
(2) proton pump, electron gradient, NADP synthase
(3) membrane, proton pump, proton gradient, ATP synthase
(4) membrane, proton pump, proton gradient, NADP synthase

Ans. (3)

143. Match **List I** with **List II** :

List I

List II

- | | |
|--------------------|---|
| A. Cohesion | I. More attraction in liquid phase |
| B. Adhesion | II. Mutual attraction among water molecules |
| C. Surface tension | III. Water loss in liquid phase |
| D. Guttation | IV. Attraction towards polar surfaces |

Choose the **correct** answer from the options given below :

- (1) A-III, B-I, C-IV, D-II (2) A-II, B-I, C-IV, D-III
(3) A-II, B-IV, C-I, D-III (4) A-IV, B-III, C-II, D-I

Ans. (3)

144. Match **List I** with **List II** :

List I	List II
A. Iron	I. Synthesis of auxin
B. Zinc	II. Component of nitrate reductase
C. Boron	III. Activator of catalase
D. Molybdenum	IV. Cell elongation and differentiation

Choose the **correct** answer from the options given below :

- (1) A-III, B-I, C-IV, D-II (2) A-II, B-IV, C-I, D-III
(3) A-III, B-II, C-I, D-IV (4) A-II, B-III, C-IV, D-I

Ans. (1)

145. Main steps in the formation of Recombinant DNA are given below. Arrange these steps in a correct sequence.

- A. Insertion of recombinant DNA into the host cell.
B. Cutting of DNA at specific location by restriction enzyme.
C. Isolation of desired DNA fragment.
D. Amplification of gene of interest using PCR.

Choose the correct answer from the options given below :

- (1) C, B, D, A (2) B, D, A, C
(3) B, C, D, A (4) C, A, B, D

Ans. (3)

146. Match **List I** with **List II** :

List I	List II
(Interaction)	(Species A and B)
A. Mutualism	I. +(A), O(B)
B. Commensalism	II. -(A), O(B)
C. Amensalism	III. +(A), -(B)
D. Parasitism	IV. +(A), +(B)

Choose the **correct** answer from the options given below :

- (1) A-IV, B-III, C-I, D-II (2) A-III, B-I, C-IV, D-II
(3) A-IV, B-II, C-I, D-III (4) A-IV, B-I, C-II, D-III

Ans. (4)

147. Given below are two statements : One is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : A flower is defined as modified shoot wherein the shoot apical meristem changes to floral meristem.

Reason R : Internode of the shoot gets condensed to produce different floral appendages laterally at successive nodes instead of leaves.

In the light of the above statements, 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 **R** is NOT the correct explanation of **A**.

Ans. (3)

148. Which one of the following statements is NOT correct ?

- (1) Water hyacinth grows abundantly in eutrophic water bodies and leads to an imbalance in the ecosystem dynamics of the water body.
(2) The amount of some toxic substances of industrial waste water increases in the organisms at successive trophic levels.
(3) The micro-organisms involved in biodegradation of organic matter in a sewage polluted water body consume a lot of oxygen causing the death of aquatic organisms.
(4) Algal blooms caused by excess of organic matter in water improve water quality and promote fisheries.

Ans. (4)

149. Identify the correct statements :

- A. Lenticels are the lens-shaped openings permitting the exchange of gases.
B. Bark formed early in the season is called hard bark.
C. Bark is a technical term that refers to all tissues exterior to vascular cambium.
D. Bark refers to periderm and secondary phloem.
E. Phellogen is single-layered in thickness.

Choose the correct answer from the options given below :

- (1) A, B and D only (2) B and C only
(3) B, C and E only (4) A and D only

Ans. (4)

150. Given below are two statements : One is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : In gymnosperms the pollen grains are released from the microsporangium and carried by air currents.

Reason R : Air currents carry the pollen grains to the mouth of the archegonia where the male gametes are discharged and pollen tube is not formed.

In the light of the above statements, 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 **R** is NOT the correct explanation of **A**.

Ans. (1)

ZOOLOGY

SECTION-A

(All questions are compulsory)

151. Match List I with List II.

List I	List II
A. Heroin	I. Effect on cardiovascular system
B. Marijuana	II. Slow down body function
C. Cocaine	III. Painkiller
D. Morphine	IV. Interfere with transport of dopamine

Choose the correct answer from the options given below:

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

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

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

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

Ans. (3)

152. Given below are two statements:

Statement I: RNA mutates at a faster rate.

Statement II: Viruses having RNA genome and shorter life span mutate and evolve faster.

In the light of the above statements, choose the correct answer from the options given below:

(1) Statement I is true but Statement II is false.

(2) Statement I false but Statement II is true.

(3) Both Statement I and Statement II are true.

(4) Both Statement I and Statement II are false.

Ans. (3)

153. Given below are two statements:

Statement I: Vas deferens receives a duct from seminal vesicle and opens into urethra as the ejaculatory duct.

Statement II: The cavity of the cervix is called cervical canal which along with vagina forms birth canal.

In the light of the above statements, choose the correct answer from the options given below:

(1) Statement I is correct but Statement II is false.

(2) Statement I incorrect but Statement II is true.

(3) Both Statement I and Statement II are true.

(4) Both Statement I and Statement II are false.

Ans. (3)

154. Which of the following functions is carried out by cytoskeleton in a cell?

(1) Motility (2) Transportation

(3) Nuclear division (4) Protein synthesis

Ans. (1)

155. Which of the following statements are correct regarding female reproductive cycle ?

A. In non-primate mammals cyclical changes during reproduction are called oestrus cycle.

B. First menstrual cycle begins at puberty and is called menopause.

C. Lack of menstruation may be indicative of pregnancy.

D. Cyclic menstruation extends between menarche and menopause.

Choose the most appropriate answer from the options given below:

(1) A, B and C only

(2) A, C and D only

(3) A and D only

(4) A and B only

Ans. (2)

156. Match List I with List II.

List I	List II
A. Vasectomy	I. Oral method
B. Coitus interruptus	II. Barrier method
C. Cervical caps	III. Surgical method
D. Saheli	IV. Natural method

Choose the correct answer from the options given below.

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

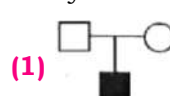
(2) A-IV, B-II, C-I, D-III

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

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

Ans. (4)

157. Which one of the following symbols represents mating between relatives in human pedigree analysis ?



Ans. (4)

158. Which of the following are NOT considered as the part of endomembrane system?

A. Mitochondria

B. Endoplasmic Reticulum

C. Chloroplasts

D. Golgi complex

E. peroxisomes

Choose the most appropriate answer from the options given below:

(1) A and D only

(2) A, D and E only

(3) B and D only

(4) A, C and E only

Ans. (4)

159. Match **List I** with **List II** with respect to human eye.

List - I	List - II
A. Fovea	I. Visible coloured portion of eye that regulates diameter of pupil.
B. Iris	II. External layer of eye formed of dense connective tissue.
C. Blind spot	III. Point of greatest visual acuity or resolution.
D. Sclera	IV. Point where optic nerve leaves the eyeball and photoreceptor cells are absent.

Choose the correct answer from the options given below.

- (1) A-I, B-IV, C-III, D-II (2) A-II, B-I, C-III, D-IV
(3) A-III, B-I, C-IV, D-II (4) A-IV, B-III, C-II, D-I

Ans. (3)

160. Match **List I** with **List II**.

List - I	List - II
A. P-wave	I. Beginning of systole
B. Q-wave	II. Repolarisation of ventricles.
C. QRS complex	III. Depolarisation of atria
D. T-wave	IV. Depolarisation of ventricles.

Choose the correct answer from the options given below:

- (1) A-II, B-IV, C-I, D-III (2) A-I, B-II, C-III, D-IV
(3) A-III, B-I, C-IV, D-II (4) A-IV, B-III, C-II, D-I

Ans. (3)

161. Match **List I** with **List II**

List - I	List - II
A. CCK	I. Kidney
B. GIP	II. Heart
C. ANF	III. Gastric gland
D. ADH	IV. Pancreas

Choose the correct answer from the options given below:

- (1) A-II, B-IV, C-I, D-III (2) A-IV, B-II, C-III, D-I
(3) A-IV, B-III, C-II, D-I (4) A-III, B-II, C-IV, D-I

Ans. (3)

162. Match **List I** with **List II**.

List - I	List - II
A. Gene 'a'	I. β -galactosidase
B. Gene 'y'	II. Transacetylase
C. Gene 'i'	III. Permase
D. Gene 'z'	IV. Repressor protein

Choose the correct answer from the options given below.

- (1) A-III, B-IV, C-I, D-II (2) A-III, B-I, C-IV, D-II
(3) A-II, B-I, C-IV, D-III (4) A-II, B-III, C-IV, D-I

Ans. (4)

163. Vital capacity of lung is

- (1) IRV + ERV + TV - RV (2) IRV + ERV + TV
(3) IRV + ERV (4) IRV + ERV + TV + RV

Ans. (2)

164. Select the correct group / set of Australian marsupials exhibiting adaptive radiation.

- (1) Mole, Flying squirrel, Tasmanian tiger cat
(2) Lemur, Anteater, Wolf
(3) Tasmanian wolf, Bobcat, Marsupial mole
(4) Numbat, Spotted cuscus, Flying phalanger

Ans. (4)

165. Match **List - I** with **List - II**.

List-I	List-II
A. Ringworm	I. <i>Haemophilus Influenzae</i>
B. Filariasis	II. <i>Trichophyton</i>
C. Malaria	III. <i>Wucheria bancrofti</i>
D. Pneumonia	IV. <i>Plasmodium vivax</i>

Choose the correct answer from the options given below.

- (1) A-III, B-II, C-I, D-IV (2) A-III, B-II, C-IV, D-I
(3) A-II, B-III, C-IV, D-I (4) A-II, B-III, C-I, D-IV

Ans. (3)

166. Match **List - I** with **List - II**

List - I (Type of Joint)	List - II (Found between)
A. Cartilaginous Joint	I. Between flat skull bones
B. Ball and socket Joint	II. Between adjacent vertebrae in vertebral column
C. Fibrous joint	III. Between carpal and metacarpal of thumb
D. Saddle joint	IV. Between Humerus and Pectoral girdle

Choose the correct answer from the options given below.

- (1) A-I, B-IV, C-III, D-II (2) A-II, B-IV, C-III, D-I
(3) A-III, B-I, C-II, D-IV (4) A-II, B-IV, C-I, D-III

Ans. (4)

167. Given below are statements one is labelled as Assertion A and the other is labelled as Reason R.

Assertion A: Nephrons are of two types: Cortical & Juxta medullary, based on their relative position in cortex and medulla.

Reason R: Juxta medullary nephrons have short loop of Henle whereas, cortical nephrons have longer loop of Henle.

In the light of the above statements, 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 R is NOT the correct explanation of A.

Ans. (1)

168. Which one of the following techniques does not serve the purpose of early diagnosis of a disease for its early treatment ?

- (1) Polymerase Chain Reaction (PCR) technique
- (2) Enzyme Linked Immuno-Sorbent Assay (ELISA) technique
- (3) Recombinant DNA Technology
- (4) Serum and Urine analysis

Ans. (4)

169. Which one of the following common sexually transmitted diseases is completely curable when detected early and treated properly ?

- (1) Hepatitis - B
- (2) HIV infection
- (3) Genital herpes
- (4) Gonorrhoea

Ans. (4)

170. Given below are two statements :

Statement I: Electrostatic precipitator is most widely used in thermal power plant.

Statement II: Electrostatic precipitator in thermal power plant removes ionising radiations.

In the light of the above statements, choose the most appropriate answer from the options given below.

- (1) Statement I is correct but Statement II is incorrect.
- (2) Statement I is incorrect but Statement II is correct.
- (3) Both Statement I and Statement II are correct.
- (4) Both Statement I and Statement II are incorrect.

Ans. (1)

171. Which of the following is not a cloning vector ?

- (1) pBR322
- (2) Probe
- (3) BAC
- (4) YAC

Ans. (2)

172. Radial symmetry is NOT found in adults of phylum _____.

- (1) Coelenterata
- (2) Echinodermata
- (3) Ctenophora
- (4) Hemichordata

Ans. (4)

173. Match **List I** with **List II**.

List I (Cell)	List II (Secretion)
A. Peptic cells	I. Mucus
B. Goblet cells	II. Bile juice
C. Oxyntic cells	III. Proenzyme pepsinogen
D. Hepatic cells	IV. HCl and intrinsic factor for absorption of vitamin B ₁₂

Choose the **correct** answer from the options given below :

- (1) A-III, B-I, C-IV, D-II
- (2) A-II, B-IV, C-I, D-III
- (3) A-IV, B-III, C-II, D-I
- (4) A-II, B-I, C-III, D-IV

Ans. (1)

174. Once the undigested and unabsorbed substances enter the caecum their backflow is prevented by :

- (1) Gastro - oesophageal sphincter
- (2) Pyloric sphincter
- (3) Sphincter of Oddi
- (4) Ileo - caecal valve

Ans. (4)

175. Given below are two statements :

Statement I : In prokaryotes, the positively charged DNA is held with some negatively charged proteins in a region called nucleoid.

Statement II : In eukaryotes, the negatively charged DNA is wrapped around the positively charged histone octamer to form nucleosome.

In the light of the above statements, choose the **correct** answer from the options given below :

- (1) **Statement I** is correct but **Statement II** is false.
- (2) **Statement I** incorrect but **Statement II** is true.
- (3) Both **Statement I** and **Statement II** are true.
- (4) Both **Statement I** and **Statement II** are false.

Ans. (2)

176. Given below are two statements :

Statement I : Ligaments are dense irregular tissue.

Statement II : Cartilage is dense regular tissue.

In the light of the above statements choose the correct answer from the options given below :

- (1) **Statement I** is true but **Statement II** is false.
- (2) **Statement I** is false but **Statement II** is true.
- (3) Both **Statement I** and **Statement II** are true.
- (4) Both **Statement I** & **Statement II** are false.

Ans. (4)

177. Given below are two statements :

Statement I : Low temperature preserves the enzyme in a temporarily inactive state whereas high temperature destroys enzymatic activity because proteins are denatured by heat.

Statement II : When the inhibitor closely resembles the substrate in its molecular structure and inhibits the activity of the enzyme, it is known as competitive inhibitor. In the light of the above statements, choose the correct answer from the options given below :

- (1) **Statement I** is true but **Statement II** is false.
- (2) **Statement I** is false but **Statement II** is true.
- (3) Both **Statement I** and **Statement II** are true.
- (4) Both **Statement I** & **Statement II** are false.

Ans. (3)

178. Which of the following statements is correct ?

- (1) Presence of large amount of nutrients in water restricts 'Algal Bloom'
- (2) Algal Bloom decreases fish mortality
- (3) Eutrophication refers to increase in domestic sewage and waste water in lakes.
- (4) Biomagnification refers to increase in concentration of the toxicant at successive trophic levels.

Ans. (4)

179. Given below are two statements :

Statement I : A protein is imagined as a line, the left end represented by first amino acid (C-terminal) and the right end represented by last amino acid (N-terminal)

Statement II : Adult human haemoglobin, consists of 4 subunits (two subunits of α type and two subunits of β type.)

In the light of the above statements, choose the correct answer from the options given below :

- (1) **Statement I** is true but **Statement II** is false.
- (2) **Statement I** is false but **II** is true.
- (3) Both **Statement I** & **Statement II** are true.
- (4) Both **Statement I** & **Statement II** are false.

Ans. (2)

180. In which blood corpuscles, the HIV undergoes replication and produces progeny viruses ?

- (1) Basophils
- (2) Eosinophils
- (3) T_H cells
- (4) B-lymphocytes

Ans. (3)

181. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R**.

Assertion A : Endometrium is necessary for implantation of blastocyst.

Reason R : In the absence of fertilization, the corpus luteum degenerates that causes disintegration of endometrium.

In the light of the above statements, 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 **R** is NOT the correct explanation of **A**.

Ans. (4)

182. Match **List I** with **List II**.

List I	List II
A. <i>Taenia</i>	I. Nephridia
B. <i>Paramoecium</i>	II. Contractile vacuole
C. <i>Periplaneta</i>	III. Flame cells
D. <i>Pheretima</i>	IV. Ureose gland

Choose the correct answer from the options given below :

- (1) A-III, B-II, C-IV, D-I
- (2) A-II, B-I, C-IV, D-III
- (3) A-I, B-II, C-III, D-IV
- (4) A-I, B-II, C-IV, D-III

Ans. (1)

183. Match **List I** with **List II**.

List I (Interacting species)	List II (Name of Interaction)
A. A Leopard and a Lion in a forest/grassland	I. Competition
B. A Cuckoo laying egg in a Crow's nest	II. Brood parasitism
C. Fungi and root of a higher plant in Mycorrhizae	III. Mutualism
D. A cattle egret and a Cattle in a field	IV. commensalism

Choose the correct answer from the options given below :

- (1) A-III, B-IV, C-I, D-II
- (2) A-II, B-III, C-I, D-IV
- (3) A-I, B-II, C-III, D-IV
- (4) A-I, B-II, C-IV, D-III

Ans. (3)

184. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R**.

Assertion A : Amniocentesis for sex determination is one of the strategies of Reproductive and Child Health Care Programme.

Reason R : Ban on amniocentesis checks increasing menace of female foeticide.

In the light of the above statements, 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 and **R** is NOT the correct explanation of **A**.

Ans. (2)

185. Broad palm with single palm crease is visible in a person suffering from :

- (1) Klinefelter's syndrome
- (2) Thalassemia
- (3) Down's syndrome
- (4) Turner's syndrome

Ans. (3)

ZOOLOGY **SECTION-B**

(Candidates can choose to attempt any 10 questions only)

186. Select the correct statements with reference to chordates.

- A. Presence of a mid-dorsal, solid and double nerve cord.
- B. Presence of closed circulatory system.
- C. Presence of paired pharyngeal gillslits
- D. Presence of dorsal heart.
- E. Triploblastic pseudocoelomate animals.

Choose the **correct** answer from the options given below:

- (1) B, D and E only (2) C, D and E only
- (3) A, C and D only (4) B and C only

Ans. (4)

187. Which one of the following is the sequence on corresponding coding strand, if the sequence on mRNA formed is as follows

5' AUCGAUCGAUCGAUCGAUCGAUCG 3' ?

- (1) 5' ATCGATCGATCGATCGATCGATCG 3'
- (2) 3' ATCGATCGATCGATCGATCGATCG 3'
- (3) 5' UAGCUAGCUAGCUAGCUAGCUAGCUAGC 3'
- (4) 3' UAGCUAGCUAGCUAGCUAGCUAGCUAGC 5'

Ans. (1)

188. The parts of human brain that helps in regulation of sexual behaviour, expression of excitement, pleasure, rage, fear etc. are:

- (1) Brain stem & epithalamus
- (2) Corpus callosum and thalamus
- (3) Limbic system & hypothalamus
- (4) Corpora quadrigemina & hippocamps.

Ans. (3)

189. Which of the following statements are correct?

- A. An excessive loss of body fluid from the body switches off osmoreceptors.
- B. ADH facilitates water reabsorption to prevent diuresis.
- C. ANF causes vasodilation.
- D. ADH causes increase in blood pressure.
- E. ADH is responsible for decrease in GFR.

Choose the correct answer from the options given below:

- (1) A, B and E only (2) C, D and E only
- (3) A and B only (4) B, C and D only

Ans. (4)

190. Which of the following statements are correct?

- A. Basophils are most abundant cells of the total WBCs
- B. Basophils secrete histamine, serotonin and heparin
- C. Basophils are involved in inflammatory response
- D. basophils have kidney shaped nucleus
- E. Basophils are agranulocytes

Choose the correct answer from the options given below:

- (1) B and C only (2) A and B only
- (3) D and E only (4) C and E only

Ans. (1)

191. Which of the following are NOT under the control of thyroid hormone?

- A. Maintenance of water and electrolyte balance
- B. Regulation of basal metabolic rate
- C. Normal rhythm of sleep-wake cycle
- D. Development of immune system
- E. Support the process of RBCs formation

Choose the **correct** answer from the options given below:

- (1) C and D only (2) D and E only
- (3) A and D only (4) B and C only

Ans. (1)

192. Which of the following is characteristic feature of cockroach regarding sexual dimorphism?

- (1) Presence of sclerites
- (2) Presence of anal cerci
- (3) Dark brown body colour and anal cerci
- (4) Presence of anal styles

Ans. (4)

193. Which one of the following is NOT an advantage of inbreeding?

- (1) Elimination of less desirable genes and accumulation of superior genes takes place due to it.
- (2) It decreases the productivity of inbred population, after continuous inbreeding.
- (3) It decreases homozygosity.
- (4) It exposes harmful recessive genes that are eliminated by selection.

Ans. (2)

194. The unique mammalian characteristics are

- (1) hairs, pinna and indirect development
- (2) pinna, monocondylic skull and mammary glands.
- (3) hairs, tympanic membrane and mammary glands.
- (4) hairs, pinna and mammary glands.

Ans. (4)

195. Select the correct statements

- A. Tetrad formation is seen during Leptotene.
- B. During Anaphase, the centromeres split and chromatids separate.
- C. Terminalization takes place during Pachytene.
- D. Nucleolus, Golgi complex and ER are reformed during Telophase.
- E. Crossing over takes place between sister chromatids of homologous chromosome.

Choose the correct answer from the options given below:

- (1) A, C and E only
- (2) B and E only
- (3) A and C only
- (4) B and D only

Ans. (4)

196. Given below are two statements:

Statement I: During G_0 phase of cell cycle, the cell is metabolically inactive.

Statement II: The centrosome undergoes duplication during S phase of interphase.

In the light of the above statement, choose the **most appropriate** answer from the options given below:

(1) Statement I is correct but Statement II is incorrect

(2) Statement I is incorrect but Statement II is correct.

(3) Both Statement I and Statement II are correct.

(4) Both Statement I and Statement II are incorrect.

Ans. (2)

197. Which of the following statements are correct regarding skeletal muscle?

- A. Muscle bundles are held together by collagenous connective tissue layer called fascicle.
- B. Sarcoplasmic reticulum of muscle fibre is a store house of calcium ions.
- C. Striated appearance of skeletal muscle fibre is due to distribution pattern of actin and myosin proteins.
- D. M line is considered as functional unit of contraction called sarcomere.

Choose the **most appropriate** answer from the options given below:

- (1) A, C and D only
- (2) C and D only
- (3) A, B and C only
- (4) B and C only

Ans. (4)

198. Match **List I** with **List II**

List I	List II
A. Logistic growth	I. Unlimited resource availability condition
B. Exponential growth	II. Limited resource availability condition
C. Expanding age pyramid	III. The percent individuals of pre-reproductive age is largest followed by reproductive and post reproductive age groups
D. Stable age pyramid	IV. The percent individuals of pre-reproductives and reproductive age group are same

Choose the **correct** answer from the options given below:

- (1) A -II, B -IV, C -I, D -III
- (2) A -II, B -IV, C -III, D -I
- (3) A -II, B -I, C -III, D -IV
- (4) A -II, B -III, C -I, D -IV

Ans. (3)

199. Match **List I** with **List II**

List I	List II
A. Mast cells	I. Ciliated epithelium
B. Inner surface of bronchiole	II. Areolar connective tissue
C. Blood	III. Cuboidal epithelium
D. Tubular parts of nephron	IV. Specialised connective tissue

Choose the **correct** answer from the options given below:

- (1) A -II, B -I, C -IV, D -III
(2) A -III, B -IV, C -II, D -I
(3) A -I, B -II, C -IV, D -III
(4) A -II, B -III, C -I, D -IV

Ans. (1)

200. In cockroach, excretion is brought about by-

- | | |
|----------------------|-----------------|
| A. Phallic gland | B. Urease gland |
| C. Nephrocytes | D. Fat body |
| E. Collateral glands | |

- (1) B, C and D only (2) B and D only
(3) A and E only (4) A, B and E only

Ans. (1)

• Though every care has been taken for accuracy in answer, there may be 1 or 2% technical error.
• Expected cut-off (GEN) 84% ±1% (For All India 15% QUOTA).

Feel the best quality education **uniformly** across all
The corporate branches of **GOAL**.



PATNA

BUDHA COLONY

Goal Building, B/58,
Budha Colony, Patna - 1
Help Line : 9334594165/66/67
Classroom & Test Centre



PATNA

WEST BORING CANAL ROAD

Pushpanjali Mall, 3rd Floor
Near Raja Pul.
Help Line : 9334594165/66/67
Classroom & Test Centre



PATNA

KANKARBAGH

Tilak Nagar Road, Opp. Rajendra Nagar Terminal,
Near Sahaj Nursing Home, Munna Chowk
Help Line : 9608360780
Classroom & Test Centre



PATNA

ACHIEVERS CAMPUS

Vivek Vihar Colony, Gola Road
Classroom & Test Centre



PATNA

GOLA ROAD

Near St. Karen's High School
Help Line : 7564902125
Classroom & Test Centre



PATNA

GOAL EDUCATION VILLAGE

Painal, Patna
Classroom & Test Centre
with residential facility.

RANCHI

LALPUR

504, 5th Floor, R.S. Tower,
Lalpur, Circular Road, Ranchi
Help Line : 7564900041/ 42/ 43
Classroom & Test Centre



RANCHI

HINOO

302, 303, 3rd Floor, Indira Place,
Main Road, Hinoo, Ranchi
Help Line : 7564900041/ 42/ 43
Classroom & Test Centre



DHANBAD

OFFICE

Housing Colony, Bartand,
Dhanbad, Jharkhand
Help Line : 9334098595, 9308057050



DHANBAD

CLASSROOM

GOAL Empire, Memko More,
Dhaiya
Help Line
9525221100, 9234300143



BHILAI

Shop No. 166, New Civic Centre
Help Line : 07884013502
09826943595, 9926454100



RAIPUR

Beside Vidya Hospital,
Shankar Nagar
Help Line
07714060711, 07415884100



DELHI

Shop No. 2, B-4,
Upper Ground Floor,
Kalkaji, New Delhi - 110019,
Help Line : 7564900045



PATNA (Corporate Office)

B-58, GOAL Building, Budha Colony, Patna - 800001
9334594165 / 66 / 67 | 8405802395 / 96 / 97

RANCHI (Classroom & Head Office)

504, 5th Floor, R.S. Tower, Lalpur, Circular Road, Ranchi
7564900041 / 7564900042 / 7564900043

DHANBAD : 9334098595, 9308057050 | BHILAI : 07884013502, 09826943595 | RAIPUR : 07714060711, 07415884100 | DELHI : 7564900045

FACILITIES



LIBRARY



HOSTEL



TRANSPORT



SEPARATE BATCH
FOR BOYS & GIRLS



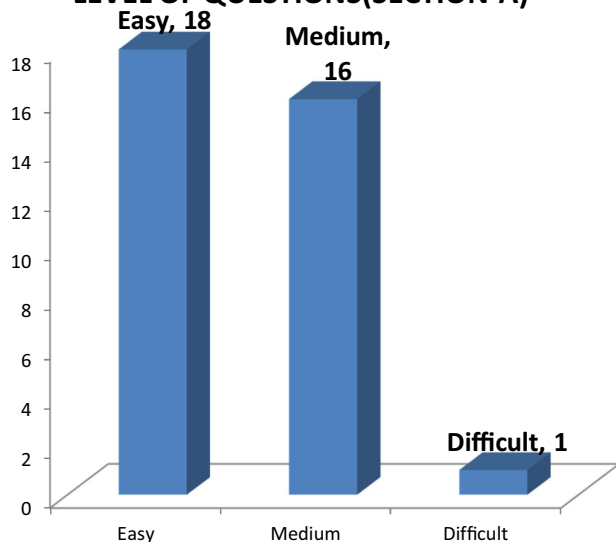
NEET - 07 May 2023

PHYSICS PAPER ANALYSIS

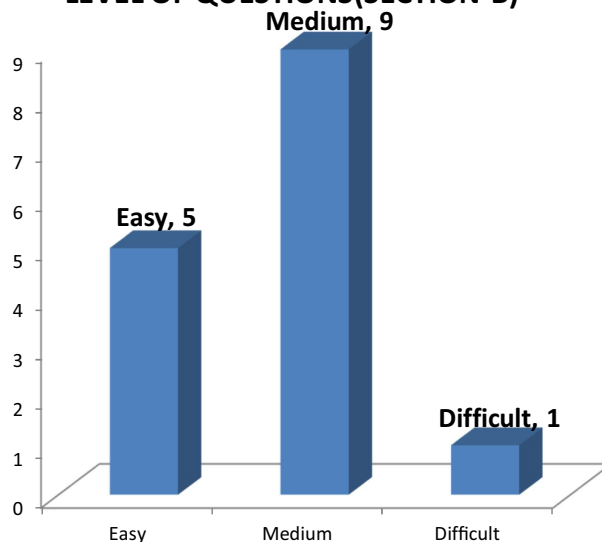
SECTION - A							
Classes	XI	XI	XI	XII	XII	XII	XI & XII
Topics	Mechanics	Heat	SHM & Waves	Electro-dynamics	Optics	Modern & Electronics	Total
Easy	7	1	1	8	0	1	18
Medium	5	1	0	4	2	4	16
Difficult	0	0	0	0	0	1	1
Total	12	2	1	12	2	6	35

SECTION - B							
Classes	XI	XI	XI	XII	XII	XII	XI & XII
Topics	Mechanics	Heat	SHM & Waves	Electro-dynamics	Optics	Modern & Electronics	Total
Easy	1	0	0	1	2	1	5
Medium	2	0	1	5	0	1	9
Difficult	1	0	0	0	0	0	1
Total	4	0	1	6	2	2	15

LEVEL OF QUESTIONS(SECTION-A)



LEVEL OF QUESTIONS(SECTION-B)



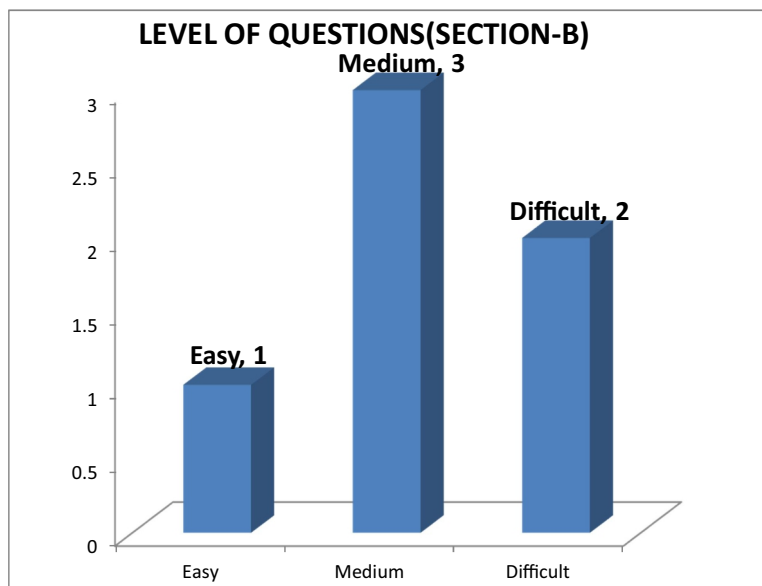
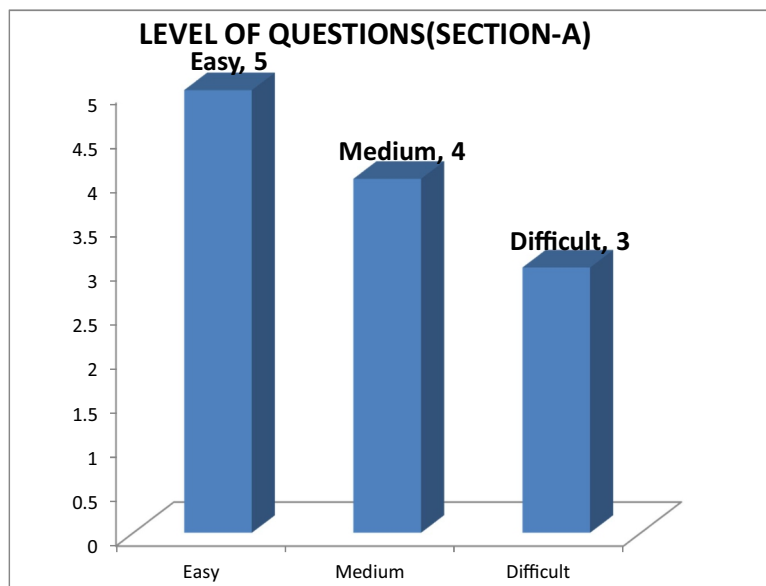


NEET - 07 May 2023

ORGANIC CHEMISTRY PAPER ANALYSIS

SECTION - A			
Classes	ORGANIC		Total
Topics	XI	XII	
Easy	3	2	5
Medium	1	3	4
Difficult		3	3
Total	4	8	12

SECTION - B			
Classes	ORGANIC		Total
Topics	XI	XII	
Easy	1		1
Medium	1	2	3
Difficult		2	2
Total	2	4	6





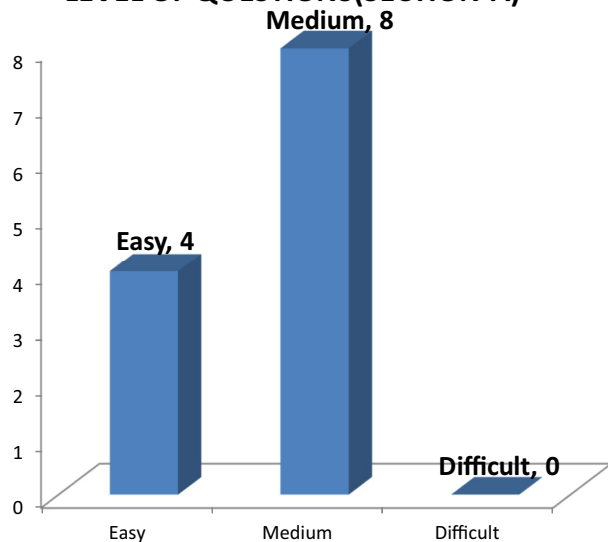
NEET - 07 May 2023

INORGANIC CHEMISTRY PAPER ANALYSIS

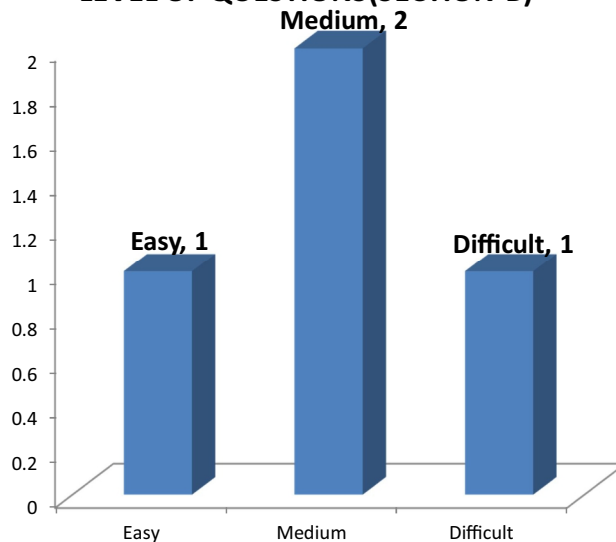
SECTION - A			
Classes	INORGANIC		Total
Topics	XI	XII	
Easy	3	1	4
Medium	6	2	8
Difficult			
Total	9	3	12

SECTION - B			
Classes	INORGANIC		Total
Topics	XI	XII	
Easy		1	1
Medium		2	2
Difficult		1	1
Total		4	4

LEVEL OF QUESTIONS(SECTION-A)



LEVEL OF QUESTIONS(SECTION-B)





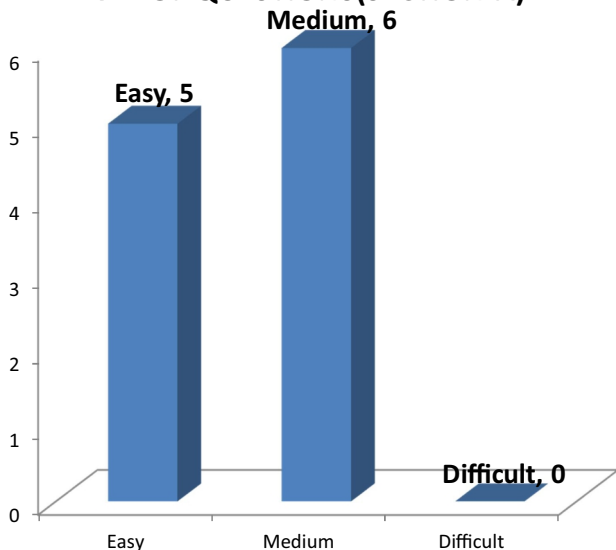
NEET - 07 May 2023

PHYSICAL CHEMISTRY PAPER ANALYSIS

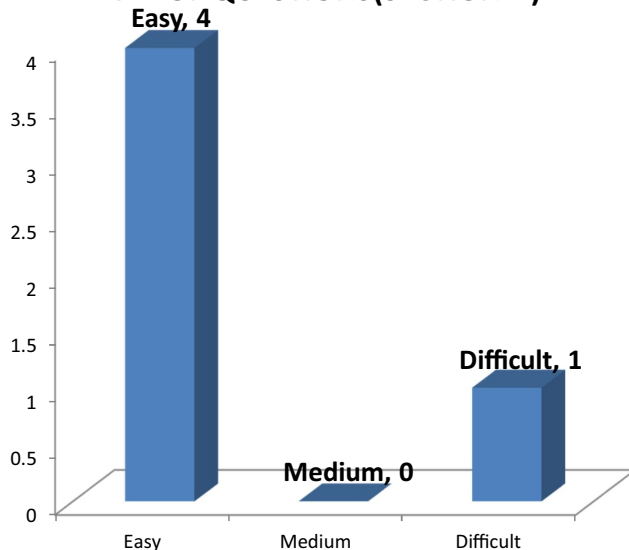
SECTION - A			
Classes	PHYSICAL		Total
Topics	XI	XII	
Easy	3	2	5
Medium	2	4	6
Difficult			
Total	5	6	11

SECTION - B			
Classes	PHYSICAL		Total
Topics	XI	XII	
Easy	3	1	4
Medium			
Difficult		1	1
Total	3	2	5

LEVEL OF QUESTIONS(SECTION-A)



LEVEL OF QUESTIONS(SECTION-B)





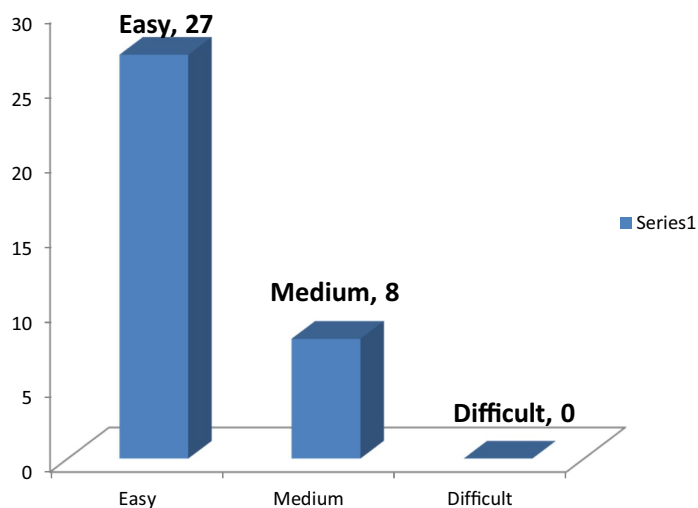
NEET - 07 May 2023

BOTANY PAPER ANALYSIS

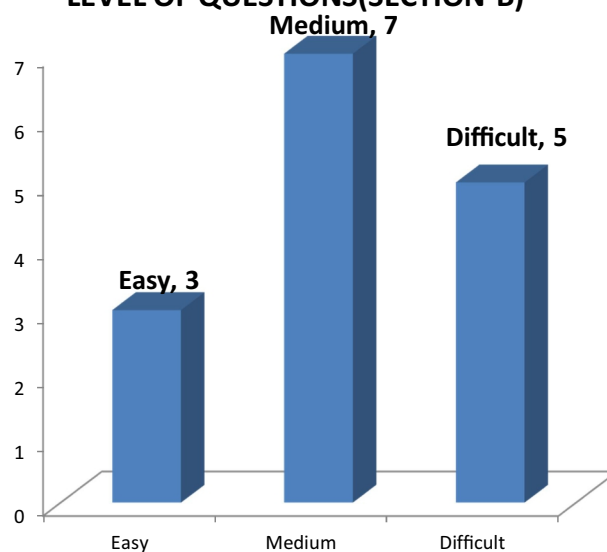
SECTION - A (BOTANY)	
Level	No. of Questions
Easy	27
Medium	8
Difficult	0
Total	35

SECTION - B (BOTANY)	
Level	No. of Questions
Easy	3
Medium	7
Difficult	5
Total	15

LEVEL OF QUESTIONS(SECTION-A)



LEVEL OF QUESTIONS(SECTION-B)





NEET - 07 May 2023

BOTANY PAPER ANALYSIS

Topics	No. of Ques.
Living World	0
Biological Classification	0
Plant Kingdom	3
Plant Morphology	3
Plant Anatomy	3
Cell Structure	0
Biomolecules	2
Cell Division	4
Transport in Plant	3
Mineral Nutrition	2
Photosynthesis	3
Plant Respiration	2
Plant Growth	2
Reproduction in Organism	0
Sexual Reproduction in Flowering Plant	3
Principal of Inheritance and Variation	2
Molecular Basis of Inheritance	5
Strategies of Enhancemet in Food Production	1
Biotechnology Principal and Process	4
Biotechnology and Its Application	0
Organism and Population	2
Ecosystem	2
Biodiversity and Conservation	2
Environmental Issue	2
Total	50



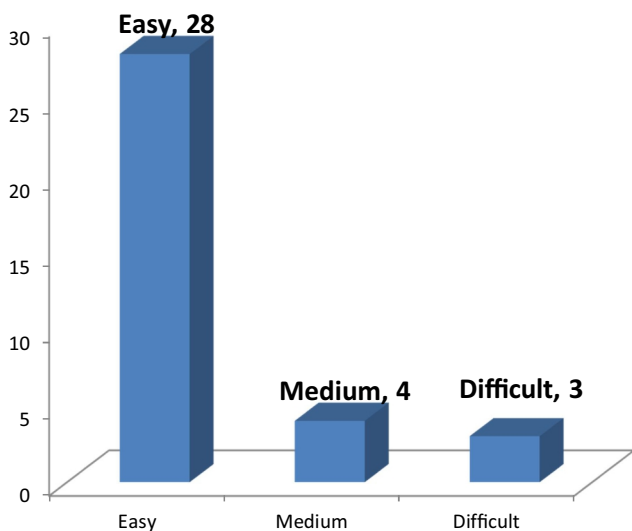
NEET - 07 May 2023

ZOOLOGY PAPER ANALYSIS

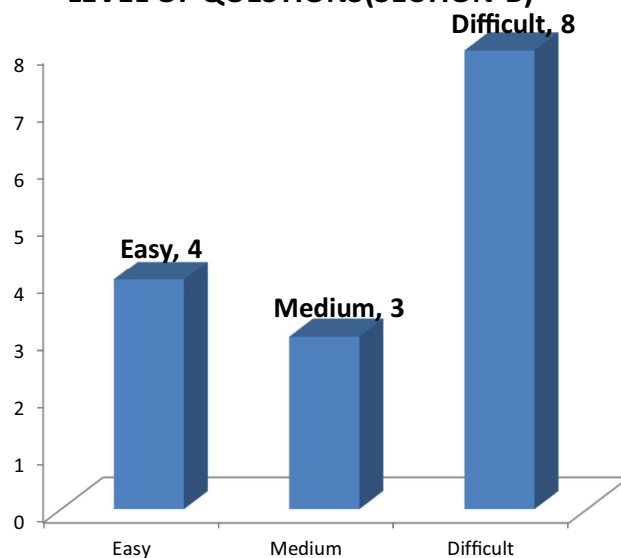
SECTION - A (ZOOLOGY)	
Level	No. of Questions
Easy	28
Medium	4
Difficult	3
Total	35

SECTION - B (ZOOLOGY)	
Level	No. of Questions
Easy	4
Medium	3
Difficult	8
Total	15

LEVEL OF QUESTIONS(SECTION-A)



LEVEL OF QUESTIONS(SECTION-B)





NEET - 07 May 2023

ZOOLOGY PAPER ANALYSIS

Topics	No. of Ques.
Animal Kingdom	4
Cell Structure	2
Biomolecules	2
Cell Cycle and Cell Division	2
Digestion	2
Human Respiration	1
Circulation	2
Excretion	3
Locomotion and Movement	2
Neural Control and Coordination	2
Chemical Coordination	2
Human Reproduction	3
Reproductive Health	3
Principal of Inheritance	2
Molecular Basis of Inheritance	4
Evolution	1
Human Health and Disease	3
Strategies for Enhancement	1
Biotechnology: Principal and Process	1
Biotechnology and Its Application	1
Organism and Population	2
Environmental Issue	2
Structural Organisation in Animal	3
Total	50