



LEADER & ACHIEVER COURSE

PHASE : MLA, MLB, MLC, MLQ, MLR, MLS, MLT, MLU, MLV, MAZA, MAZB, MAZC, MAZD,
MAZE, MAZF, MAZP, MAZQ & MAZR

TARGET : PRE-MEDICAL 2024

Test Type : MAJOR

Test Pattern : NEET (UG)

TEST DATE : 15-03-2024

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
A.	2	1	4	4	2	2	1	1	3	2	4	3	2	1	2	3	4	3	3	2	3	4	3	1	2	2	4	2	2	4	
Q.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
A.	2	3	1	3	3	2	3	1	2	3	3	1	1	4	1	3	4	2	2	3	1	3	2	3	4	3	4	3	1	3	
Q.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	
A.	2	3	3	1	2	3	2	2	1	4	1	2	4	1	1	2	2	4	2	1	4	2	2	1	1	1	1	4	3	3	
Q.	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	
A.	3	3	4	1	4	2	2	2	2	4	1	3	2	4	2	4	4	2	1	2	1	1	3	1	1	1	2	2	1	1	
Q.	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	
A.	3	4	4	3	4	2	2	3	3	4	3	4	2	1	2	4	4	4	2	3	2	3	3	3	4	3	3	4	2	3	
Q.	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	
A.	3	4	2	1	4	3	2	1	2	3	3	1	4	3	1	4	2	3	4	3	2	3	2	2	4	2	3	3	1	3	
Q.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200											
A.	2	2	4	4	3	3	1	4	1	4	1	3	1	1	1	1	3	1	1	1	3										

HINT – SHEET

SUBJECT : CHEMISTRY

SECTION-A

- | | |
|---|---|
| 4. Ans (4)
NCERT-XII, Pg. # 47, Part-I | 11. Ans (4)
NCERT-XII, Pg. # 37, 39, 40, 42, Part-I |
| 5. Ans (2)
NCERT-XII, Pg. # 58, Part-I | 12. Ans (3)
NCERT-XII, Pg. # 43, Part-I |
| 6. Ans (2)
NCERT-XII, Pg. # 38, Part-I | 13. Ans (2)
NCERT-XII, Pg. # 47, Part-I |
| 7. Ans (1)
NCERT-XII, Pg. # 58, Part-I | 14. Ans (1)
NCERT-XII, Pg. # 41, 44, 45, Part-I |
| 9. Ans (3)
NCERT-XII, Pg. # 57, Part-I | 15. Ans (2)
NCERT-XII, Pg. # 53, Part-I |
| 10. Ans (2)
NCERT-XII, Pg. # 46, Part-I | 16. Ans (3)
NCERT-XII, Pg. # 59, Part-I |
| | 17. Ans (4)
NCERT-XII, Pg. # 45, Part-I |

18. Ans (3)

NCERT-XII, Pg. # 48, 55, 56, 57, Part-I

21. Ans (3)

NCERT-XII, Pg. # 64, Part-1

22. Ans (4)

$$\Lambda_{\text{eq}} = \frac{\Lambda_m}{V.F.}$$

V.F. for $\text{Fe}_2(\text{SO}_4)_3 = 6$

$$\Lambda_{\text{eq}} = \frac{\Lambda_m}{6}$$

23. Ans (3)

NCERT-XII, Pg. # 89, Part-1

24. Ans (1)

$$E_{\text{cell}}^{\circ} = E_{\text{cathode}}^{\circ} - E_{\text{anode}}^{\circ} = 0.80 + 0.76$$

$$= 1.56 \text{ V}$$

25. Ans (2)

NCERT-XII, Pg. # 80, Part-1

26. Ans (2)

$$\Lambda_m^{\circ} \text{BaCl}_2 = \Lambda_m^{\circ} \text{Ba}^{+2} + 2 \Lambda_m^{\circ} \text{Cl}^-$$

$$= 127 + 2 \times 76$$

$$= 279 \text{ S cm}^2 \text{ mol}^{-1}$$

27. Ans (4)

$$\Delta G_3^{\circ} = \Delta G_2^{\circ} - \Delta G_1^{\circ}$$

$$-1 \times F \times E^{\circ} = [-2 \times F \times (x_2)] - [-1 \times F \times (x_1)]$$

$$E^{\circ} = 2x_2 - x_1$$

28. Ans (2)

$$(A) E_{\text{Cell}}^{\circ} = E_{\text{Cr/Cr}^{+3}}^{\circ} + E_{\text{Fe}^{+2}/\text{Fe}}^{\circ} = 0.75 + (-0.45) \\ = + 0.30 \text{ V}$$

$$(B) E_{\text{Cell}}^{\circ} = E_{\text{Zn/Zn}^{+2}}^{\circ} + E_{\text{Ag/Ag}}^{\circ} = 0.76 + 0.80 \\ = + 1.56 \text{ V}$$

$$(C) E_{\text{Cell}}^{\circ} = E_{\text{Cd/Cd}^{+2}}^{\circ} + E_{\text{H}^{+}/\text{H}_2}^{\circ} = 0.40 + 0 \\ = + 0.40 \text{ V}$$

$$(D) E_{\text{Cell}}^{\circ} = E_{\text{Ni/Ni}^{+2}}^{\circ} + E_{\text{Au/Au}^{+3}}^{\circ} = 0.25 + 1.50 \\ = + 1.75 \text{ V}$$

29. Ans (2)

Unit of rate constant = $(\text{mol})^{1-n} (\text{L})^n \text{ s}^{-1}$

where n is order of reaction. On comparison with given unit of K,

$$1-n = \frac{-1}{2}$$

$$n = \frac{3}{2}$$

30. Ans (4)

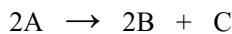
NCERT XII, Part-I Pg # 102, 106, 110

Zero order reaction can never be elementary reaction.

Because molecularity of a reaction cannot be zero.

31. Ans (2)

NCERT XII, Part-I, Pg # 109



$$t = 0 \quad 4 \text{ atm} \quad 0 \quad 0$$

$$t = 100 \text{ s} \quad 4 - 2x \quad 2x \quad x$$

$$\text{Total pressure} = 4 - 2x + 2x + x$$

$$5 = 4 + x$$

$$x = 1 \text{ atm}$$

$$k = \frac{2.303}{t} \log\left(\frac{4}{4-2x}\right)$$

$$k = \frac{2.303}{100} \log\left(\frac{4}{2}\right)$$

$$k = \frac{2.303 \times 0.3010}{100}$$

$$k = \frac{0.693}{100}$$

$$k = 6.93 \times 10^{-3} \text{ s}^{-1}$$

32. Ans (3)

NCERT XII, Part-I Pg # 120

33. Ans (1)

NCERT XII, Part-I, Pg # 111, Edition 2019

34. Ans (3)

$$\ln k = \ln A - \frac{E_a}{RT}$$

$$y = c + mx$$

$$\text{slope} = -\frac{E_a}{R} = -\frac{8.314 \times 1000 \text{ J/mol}}{8.314 \text{ J/mol K}}$$

$$= -1000 \text{ K}$$

35. Ans (3)

Rate constant of any reaction does not depend on concentration of reactant.

SECTION-B

41. Ans (3)

$$E_{op} = 0.059 \times pH$$

$$= 0.059 \times 10$$

$$= 0.59 \text{ V}$$

42. Ans (1)

$$\text{Reducing power} \propto \frac{1}{\text{SRP}}$$

43. Ans (1)

$$\text{ROR} = \frac{(\text{ROA})_{\text{NO}_2}}{4}$$

$$= \frac{2 \times 10^{-2}}{4} = 0.5 \times 10^{-2}$$

$$= 5 \times 10^{-3} \text{ mol L}^{-1} \text{ s}^{-1}$$

$$(\text{ROD})_{\text{N}_2\text{O}_5} = 2 \text{ ROR}$$

$$= 2 \times 5 \times 10^{-3}$$

$$= 10^{-2} \text{ mol L}^{-1} \text{ s}^{-1}$$

Amount of N_2O_5 consumed in

$$20 \text{ sec} = 10^{-2} \text{ mol L}^{-1} \text{ s}^{-1} \times 20 \text{ s}$$

$$= 20 \times 10^{-2} \text{ mol L}^{-1}$$

44. Ans (4)

NCERT XII, Part-I, Pg # 111

$$t_{87.5\%} = 3t_{1/2} \text{ (for first order reaction)}$$

45. Ans (1)

NCERT XII, Part-I, Pg # 106, 108

46. Ans (3)

$$k = \frac{a}{2(t_{1/2})_A} \text{ (for zero order)}$$

$$k = \frac{0.693}{(t_{1/2})_B} \text{ (for first order)}$$

$$\frac{a}{2(t_{1/2})_A} = \frac{0.693}{(t_{1/2})_B}$$

$$\frac{\ln 8}{2(t_{1/2})_A} = \frac{\ln 2}{(t_{1/2})_B}$$

$$\frac{3 \ln 2}{2(t_{1/2})_A} = \frac{\ln 2}{(t_{1/2})_B}$$

$$3(t_{1/2})_B = 2(t_{1/2})_A$$

$$(t_{1/2})_A = \frac{3}{2}(t_{1/2})_B$$

47. Ans (4)

NCERT XII, Part-I, Pg # 115, 116 Edition 2019

Fraction of molecules with most probable K.E. decreases at higher temperature.

48. Ans (2)

$$\log\left(\frac{K_2}{K_1}\right) = \frac{E_a}{2.303 R} \left(\frac{T_2 - T_1}{T_1 T_2} \right)$$

$$\log 4 = \frac{E_a}{2.303 \times 8.314} \left(\frac{20}{300 \times 320} \right)$$

$$E_a = \frac{0.6020 \times 2.303 \times 8.314 \times 300 \times 320}{20}$$

$$= 55327 \text{ J mol}^{-1}$$

$$= 55.3 \text{ kJ mol}^{-1}$$

49. Ans (2)

$$(t_{1/2})_I = \frac{1}{2}(t_{1/2})_{II}$$

$$\frac{(t_{1/2})_I}{(t_{1/2})_{II}} = \frac{k_2}{k_1} = \frac{1}{2}$$

$$\ln k_1 = \ln A - \frac{E_{a_1}}{RT} \quad \dots(1)$$

$$\ln k_2 = \ln A - \frac{E_{a_2}}{RT} \quad \dots(2)$$

Eq.(2) – Eq.(1)

$$\ln k_2 - \ln k_1 = \frac{E_{a_1} - E_{a_2}}{RT}$$

$$\ln\left(\frac{k_2}{k_1}\right) = \frac{E_{a_1} - E_{a_2}}{RT}$$

$$\ln\left(\frac{1}{2}\right) = \frac{E_{a_1} - E_{a_2}}{RT}$$

$$\ln 2 = \frac{E_{a_2} - E_{a_1}}{RT} \Rightarrow E_{a_2} - E_{a_1} = RT \ln 2$$

50. Ans (3)

NCERT XII, Part-I, Pg # 116

- On increasing temperature, rate of reaction increases whether the reaction is exothermic or endothermic.
- E_a of a reaction does not depend on temperature.

SUBJECT : PHYSICS**SECTION-A****51. Ans (1)**

By theory.

52. Ans (3)

$$\text{After Redistribution, } V_1 = V_2 \Rightarrow \frac{Q_1}{Q_2} = \frac{R_1}{R_2}$$

$$\Rightarrow Q_{25\text{cm}} > Q_{20\text{cm}} (\because Q \propto R)$$

53. Ans (2)

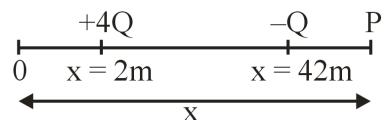
A negatively charged body acquires some electrons, so its mass is more than its neutral mass.

54. Ans (3)

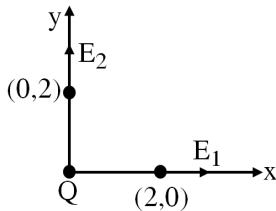
Because one vertex has missing charge, Hence field at centre

$$E = \frac{K(2Q)}{4a^2} \Rightarrow \text{force on charge } q_0$$

$$F = \frac{2KQq_0}{4a^2} = \frac{KQq_0}{2a^2}$$

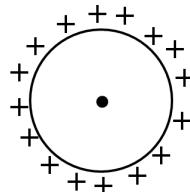
55. Ans (4)For $F = 0$, $E = 0$ for point P-

$$\frac{K(4Q)}{(x-2)^2} = \frac{Q}{(x-42)^2} \Rightarrow x = 82 \text{ m}$$

56. Ans (3)

$$\vec{E}_1 \perp \vec{E}_2$$

$$\text{so, } \vec{E}_1 \cdot \vec{E}_2 = 0$$

57. Ans (4)

At centre of charged ring

$$V = V_0$$

$$E = 0$$

58. Ans (3)

$$\vec{E} = -\frac{2k\lambda}{r} \hat{j} \text{ where } k = \frac{1}{4\pi\epsilon_0} \text{ and } \lambda = \frac{q}{\pi r}$$

$$\vec{E} = -\frac{q}{2\pi^2\epsilon_0 r^2} \hat{j}$$

60. Ans (3)

$$\phi = \vec{E} \cdot \vec{A} = (2.0 \times 10^3) \hat{k} \cdot (10 \times 20 \times 10^{-4}) \hat{k}$$

$$= 40 \text{ v.m.}$$

61. Ans (2)

Electric field on Gaussian surface depend on both charges present inside and outside Gaussian surface.

62. Ans (3)

From theory

63. Ans (3)

$$w = \text{change in P.E.} = q\Delta V$$

$$w_{A \rightarrow B} = (V_B - V_A) \quad V_B = V_C$$

$$w_{A \rightarrow C} = (V_C - V_A) \quad \therefore w_{A \rightarrow B} = w_{A \rightarrow C}$$

64. Ans (1)

$$\vec{E} = - \left(\frac{\partial V}{\partial x} \hat{i} + \frac{\partial V}{\partial y} \hat{j} + \frac{\partial V}{\partial z} \hat{k} \right)$$

$$= (2xy + z^3) \hat{i} + (x^2) \hat{j} + (3xz^2) \hat{k}$$

65. Ans (2)

Surface charge density σ is more at sharp points.

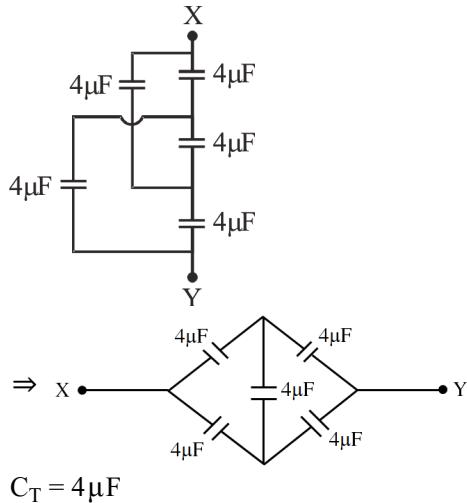
$$\text{Also } E = \frac{\sigma}{\epsilon_0}$$

66. Ans (3)

$$V = \frac{Q}{C}$$

67. Ans (2)

$$\therefore \frac{3}{2}Q = CV \Rightarrow V = \frac{3Q}{2C}$$

68. Ans (2)**69. Ans (1)**

$$U = \frac{1}{2}CV^2 = \frac{1}{2}C \left(\frac{\sigma}{\epsilon_0} d \right)^2$$

70. Ans (4)

$$I = \frac{6}{1+3+2} = 1 \{ \text{in A} \}$$

P.D. across 3Ω is

$$V_0 = 1 \times 3 = 3 \text{ V}$$

$$U = \frac{1}{2}CV_0^2 = \frac{1}{2} \times 2 \times 10^{-6} \times 3^2 = 9 \mu J$$

71. Ans (1)

$$C_1 = \frac{A\epsilon_r\epsilon_0}{d} = \frac{2A\epsilon_0}{d}$$

$$C_2 = \frac{A\epsilon_r\epsilon_0}{2d} = \frac{2A\epsilon_0}{2d} = C_1$$

$$\text{Therefore } V_1 = V_2 = \frac{V_2}{2}$$

$$\Rightarrow E_1 = \frac{V_1}{d} = \frac{V}{2d} \text{ & } E_2 = \frac{V_2}{2d} = \frac{V}{4d}$$

72. Ans (2)

Charge on bigger drop = $27 \times$ charge on small drop

$$[q' = 27q]$$

$$V_I = V_F$$

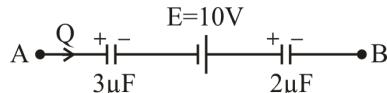
$$27 \frac{4}{3}\pi r^3 = \frac{4}{3}\pi R^3$$

$$R = 3r$$

Capacitance of bigger drop

$$C' = 4\pi\epsilon_0 3r = 3C$$

$$[C' = 3C]$$

73. Ans (4)

By KVL from A to B

$$V_A - \frac{Q}{3} + 10 = \frac{Q}{2} = V_B$$

$$\Rightarrow V_A - V_B + 10 = \frac{Q}{3} + \frac{Q}{2}$$

$$\Rightarrow 5 + 10 = Q \left(\frac{5}{6} \right)$$

$$\Rightarrow Q = \frac{15 \times 6}{5} \Rightarrow Q = 18 \mu C$$

$$\Delta V_{2\mu F} = \frac{Q}{C_2} = \frac{18\mu C}{2\mu F} = 9V$$

74. Ans (1)

$$\frac{R}{12} = \frac{40}{60} \Rightarrow R = 8\Omega$$

$$R = \rho \frac{A}{l}$$

$$\Rightarrow \rho = \frac{RA}{l} = \frac{8 \times 0.2 \times 10^{-6}}{1}$$

$$= 1.6 \times 10^{-6} \Omega \text{-m}$$

75. Ans (1)

$$V_d = \frac{I}{neA}$$

76. Ans (2)

$$m_A = m_B$$

$$\left(\frac{\pi r^2}{4}\right) \ell_1 d = (\pi r^2) \ell_2 d$$

$$\Rightarrow \frac{\ell_1}{\ell_2} = 4 \quad \dots\dots (1)$$

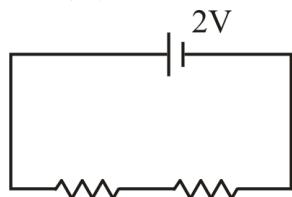
$$\text{Now } \frac{R_1}{R_2} = \frac{\ell_1}{\ell_2} \times \left(\frac{r_2}{r_1}\right)^2$$

$$= 4 \times \left(\frac{r}{r/2}\right)^2$$

$$= 16$$

$$\Rightarrow R_2 = \frac{24}{16} = 1.5 \Omega$$

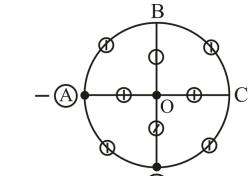
77. Ans (2)



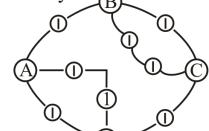
$$i = \frac{2}{60}$$

$$\Delta V = i \times 40 = \frac{2}{60} \times 40 = \frac{4}{3} = 1.33 \text{ V}$$

78. Ans (4)



By symmetry



$$R_{AD} = \frac{(2/3)(8/3)}{\frac{2}{3} + \frac{8}{3}}$$

$$R_{AD} = \frac{16/9}{10/3} = \frac{16}{10} \times \frac{3}{9} = \frac{8}{15}$$

79. Ans (2)

$$i = \frac{E_{\text{net}}}{R_{\text{net}}} = \frac{1.5 - 1.3}{r_2 + r_1} = \frac{0.2}{r_1 + r_2}$$

Reading of (V) = TPD of $E_1 \Rightarrow 1.45 = E + ir_1$

$$\Rightarrow 1.45 = 1.3 + \left(\frac{0.2}{r_1 + r_2}\right) r_1$$

$$\Rightarrow \frac{0.2r_1}{r_1 + r_2} = 0.15 \Rightarrow 4r_1 = 3r_1 + 3r_2$$

$$\Rightarrow r_1 = 3r_2$$

80. Ans (1)

For maximum current, ... (i)

$$mR = nr \quad \dots (ii)$$

Given that $mn = 45$ Hence, $m \times 2.5 = n \times 0.5$

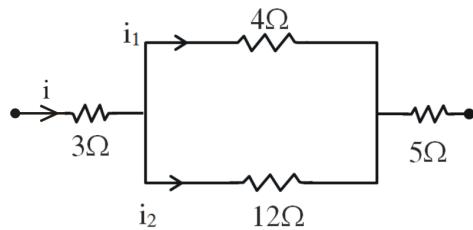
$$\text{or } n = 5m \quad \dots (iii)$$

From equation (ii) and (iii), $5m^2 = 45$ or $m = 3$

$$\Rightarrow n = 15$$

81. Ans (4)

$$P_{12} = 12W$$



$$i_2 = \frac{4}{16} \times i = \frac{1}{4}i$$

$$\therefore P_{12} = i_2^2 \times 12$$

$$12 = \left(\frac{i}{4}\right)^2 \times 12$$

$$i^2 = 16$$

$$i = 4A$$

$$\text{so } P_3 = i^2 \times 3 = (4)^2 \times 3 = 48 W$$

82. Ans (2)

$$P = \frac{V^2}{R} \text{ Initially, } I = \frac{V}{2R}$$

$$\text{Power across } P_x = P_y = \left(\frac{\varepsilon^2}{4R}\right) R$$

$$\text{Finally, } I = \frac{2V}{3R}, \text{ Power}$$

$$P_x = \frac{4V^2}{9R}, P_y = P_z = \frac{2V^2}{9R}$$

Hence P_x increases, P_y decreases

83. Ans (2)



$$R_{eq} = R_1 + R_2$$

$$\Rightarrow \frac{2\ell}{\sigma_{eq}A} = \frac{\ell}{\sigma_1 A} + \frac{\ell}{\sigma_2 A} \Rightarrow \sigma_{eq} = \frac{2\sigma_1\sigma_2}{\sigma_1 + \sigma_2}$$

84. Ans (1)

$$\sigma_i = \frac{\theta}{i} = \frac{\theta}{iG} \cdot G = \sigma_v G \Rightarrow \frac{\sigma_i}{G} = \sigma_v$$

85. Ans (1)

Both Assertion & Reason are True & the Reason is correct explanation of the Assertion.

SECTION-B

86. Ans (1)

At equilibrium, $\tan \theta = \frac{F_E}{mg}$

$$\frac{x}{2L} = \frac{1}{4\pi\epsilon_0} \frac{q^2}{x^2 mg} \quad (\because \tan \theta \approx \sin \theta = \frac{x}{2L})$$

$$\Rightarrow x = \left[\frac{q^2 L}{2\pi\epsilon_0 mg} \right]^{\frac{1}{3}}$$

87. Ans (1)

$$E = \frac{2k\lambda}{r} \Rightarrow \frac{F}{q} = \frac{2k\lambda}{r}$$

$$\text{or } F = \frac{2k\lambda q}{r} = mr\omega^2$$

$$\frac{mr^2 4\pi^2}{T^2} = \frac{2k\lambda q}{r}; T^2 = \frac{mr^2 4\pi^2}{2k\lambda q}$$

$$T = 2\pi r \sqrt{\frac{m}{2k\lambda q}}$$

88. Ans (4)

* Net force on dipole in uniform electric field is zero.

* $\tau = PE \sin \theta$ when $\theta = 90^\circ \Rightarrow \tau = \tau_{max} = PE$.

89. Ans (3)

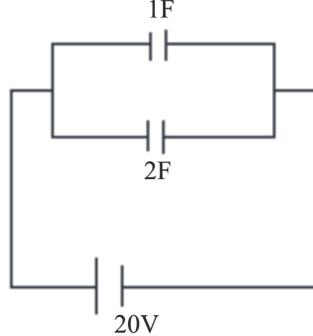
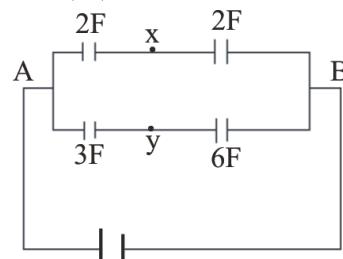
conceptual

90. Ans (3)

$$C = \frac{\epsilon_0 A}{d} \therefore d \text{ increases so } C \text{ decreases}$$

If $V = \text{constant}$ then Q decreases and if $Q = \text{constant}$ then V increases.

91. Ans (3)

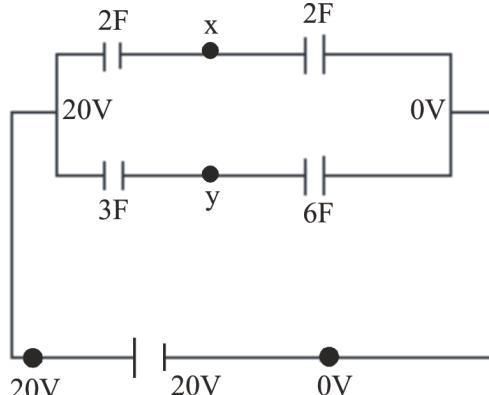


$$Q = 3 \times 20 = 60C$$

$$\frac{Q_1}{Q_2} = \frac{C_1}{C_2}$$

$$Q_1 = \frac{C_1}{C_1 + C_2} \times Q = \frac{1}{3} \times 60 = 20C$$

$$Q_2 = \frac{C_2}{C_1 + C_2} \times Q = \frac{2}{3} \times 60 = 40C$$



$$V_x = 0 + \frac{20}{2} = 10V$$

$$V_y = 0 + \frac{40}{6} = \frac{20}{3} = 6.66V$$

$$\Delta V = V_x - V_y = 10 - 6.66 = 3.33V$$

92. Ans (3)

Potential energy stored in capacitor

$$U = \frac{1}{2}CV^2$$

as battery is connected, it will keep the potential difference constant

So $U \propto C$

on inserting dielectric, C will increase

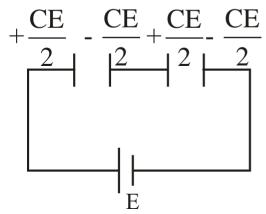
So U will also increase.

Also battery maintains the potential as constant.

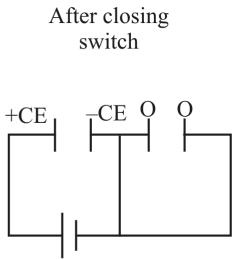
So, if capacitance is varied, the value of charge will vary.

93. Ans (4)

Before closing switch



After closing switch



(P) Charge flown through battery after closing

switch = $(CE/2)$

$$(Q) (W.D)_{\text{battery}} = \left(\frac{CE}{2} \right) \times E = \left(\frac{CE^2}{2} \right)$$

(R) Charge on capacitor A on closing switch

= CE

$$(S) (WD)_{\text{Battery}} = \Delta U + \text{Heat}$$

$$\frac{CE^2}{2} = \left[\frac{1}{2}CE^2 - \frac{1}{2} \frac{CE^2}{4} \times 2 \right] + \text{Heat}$$

$$\Rightarrow \text{Heat} = \frac{CE^2}{4}$$

94. Ans (1)

Voltmeter can't be in series & ammeter can't be in parallel. only (1) gives correct arrangement.

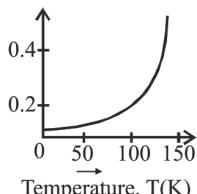
95. Ans (4)

$$G = \frac{RS}{R-S}$$

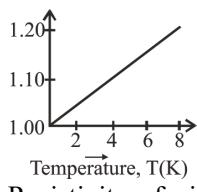
$$G_1 = \frac{(3300)(80)}{(3300-80)} \approx 82\Omega$$

$$> G_2 = \frac{(5000)(80)}{(5000-80)} \approx 81\Omega$$

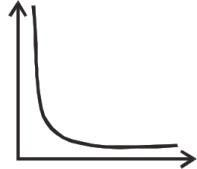
$$G = \frac{G_1 + G_2}{2} \approx 80\Omega$$

96. Ans (2)

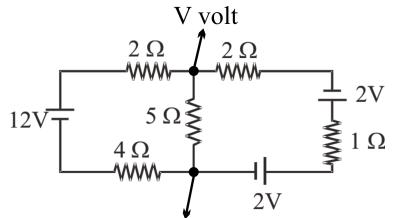
Resistivity ρ_T of copper as a function of temperature T



Resistivity of nichrome as function of absolute temperature



temperature dependence of resistivity for a semiconductor

97. Ans (2)

$$\frac{V-12}{6} + \frac{V-0}{5} + \frac{V+2-2}{3} = 0$$

$$\frac{5V-60+6V-0+10V}{30} = 0$$

$$21V = 60 \Rightarrow V = \frac{60}{21} = \frac{20}{7} \text{ volt}$$

$$i_{5\Omega} = \frac{20/7}{5} = \frac{4}{7} \text{ Amp.}$$

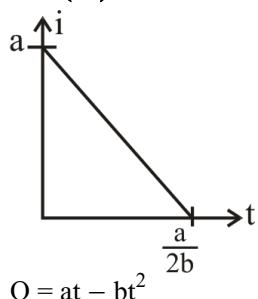
98. Ans (2)

$$\frac{I_g}{5} \times G = \frac{4I_g}{5} \times 4 \Rightarrow G = 16\Omega$$

$$I \times 16 = (I_g - I) \frac{4}{3}$$

$$I = \left(\frac{I_g}{13} \right)$$

99. Ans (2)



$$Q = at - bt^2$$

$$i = a - 2bt$$

$$\frac{di}{dt} = -2b$$

100. Ans (4)

$$S = \frac{i_g G}{i - i_g}$$

For higher range (i) smaller shunt resistance(s).

SUBJECT : BOTANY**SECTION-A**

101. Ans (1)

NCERT XII, Pg.# 36

102. Ans (3)

NCERT XII Pg. # 24, 25

103. Ans (2)

NCERT XII Pg. # 23

104. Ans (4)

NCERT XII Pg. # 24

105. Ans (2)

NCERT XII Pg. # 34

106. Ans (4)

NCERT XII Pg. # 33

107. Ans (4)

NCERT-XII, Pg. # 36

108. Ans (2)

NCERT XII Pg. # 24

109. Ans (1)

NCERT XII Pg. # 29

110. Ans (2)

NCERT XI Pg. 87

111. Ans (1)

NCERT XI Pg. # 84

112. Ans (1)

NCERT XI Pg. 86

113. Ans (3)

NCERT XI Pg. # 85

114. Ans (1)

NCERT XI Pg. 90

115. Ans (1)

NCERT XI Pg. 91

116. Ans (1)

NCERT XI Pg. # 91

117. Ans (2)

NCERT XIth Pg. # 69, para - 5.3

118. Ans (2)

NCERT XII Pg. # 36 & 37

119. Ans (1)

NCERT XI Pg. # 76

120. Ans (1)
NCERT XIth Pg. # 68

121. Ans (3)
NCERT XIth Pg. # 72, para-5.4

122. Ans (4)
NCERT XII Pg. # 23

123. Ans (4)
NCERT-XII, Pg. # 26, 27

124. Ans (3)
NCERT (XI) Pg # 67-71

125. Ans (4)
NCERT XI Pg : 76, 77

126. Ans (2)
NCERT (XI) Pg # 86

127. Ans (2)
NCERT (XI) Pg # 86-87 (E), 86-88 (H)

128. Ans (3)
NCERT XI Pg. # 88

129. Ans (3)
NCERT (XI) Pg # 66-71

130. Ans (4)
NCERT XI, Pg. # 75, 79

131. Ans (3)
NCERT-XI, Pg. # 77

132. Ans (4)
NCERT (XI) Pg # 85

133. Ans (2)
NCERT XI Pg. # 71

134. Ans (1)
NCERT XI Pg. # 75

135. Ans (2)
NCERT XII Pg. # 19, 20

Pea, bean and Groundnut
(i), (ii) and (iii) are correct

SECTION-B

136. Ans (4)
NCERT XI Pg. # 88

137. Ans (4)
NCERT XII Pg. # 38

138. Ans (4)
NCERT XII Pg. # 21, 26

139. Ans (2)
NCERT-XII Pg. 28, 29, 31

140. Ans (3)
NCERT-XII, Pg. 28

141. Ans (2)
NCERT (XII) Pg # 23(E), 24(H)

142. Ans (3)
NCERT (XII) Pg # 21, 26(E), 23, 27(H)

143. Ans (3)
NCERT XI Pg. # 76,77

144. Ans (3)
NCERT XI, Pg. # 77

145. Ans (4)
NCERT XI Pg. # 72

146. Ans (3)
NCERT (XI) Pg # 90

147. Ans (3)
NCERT (XI) Pg # 89

148. Ans (4)
NCERT XI Pg. # 92

149. Ans (2)
NCERT XI Page-85-89
B and C correct

150. Ans (3)
NCERT XI Pg. # 77

SUBJECT : ZOOLOGY**SECTION-A****153. Ans (2)**

Module Pg.# 45, 47

159. Ans (2)

NCERT Pg. # 49 (old)

160. Ans (3)

NCERT-XII, Pg. # 47

169. Ans (4)

NCERT (XIIth) (Eng), Para.-1, Pg. # 51

NCERT (XIIth) (Hindi), Para.-1, Pg. # 55

173. Ans (2)

NCERT XII, Pg. # 61

174. Ans (2)

NCERT XII, Pg. # 53-54

175. Ans (4)

NCERT (XII) Pg. # 61 ; Para-4

181. Ans (2)

→ IUD is related to contraceptive methods.

→ 'Saheli' is once a week, not steroid pill, which is preparation of Centchroman.(Anti estrogen receptor acting drug)

182. Ans (2)

NCERT XII, Pg # 66,67

183. Ans (4)

NCERT Page # 65

185. Ans (3)

NCERT XII Pg. # 58

SECTION-B**186. Ans (3)**

NCERT Pg. No. 37

189. Ans (1)

NCERT-XII Pg. # 53 para-1

192. Ans (3)

NCERT Pg. # 54

194. Ans (1)

NCERT-XII, Pg. # 43, 44

196. Ans (1)

Both statements are correct.