

MAJOR TEST # 06

ALLEN NEET-UG

DATE : 15 - 04 - 2013

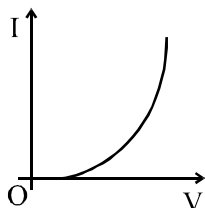
SYLLABUS - 03 & 04

ANSWER KEY

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

HINT – SHEET

6. To increase frequency of light emitted from LED, Potential barrier to diode is increased so



7. $K_A + U_A = K_B + U_B$
 $100e + 20 \times 2e = K_B + 80 \times 2e$
 $K_B = -20 \text{ eV}$
 But negative value of kinetic energy is not possible so α -Particle, cannot reach at the point.

8. Common voltage = $\frac{C_1 V_1 - C_2 V_2}{C_1 + C_2}$

(+ive plate of one capacitor is connected with -ive plate of second capacitor)

$$\Rightarrow 120 C_1 = 200 C_2 \Rightarrow 3C_1 = 5C_2.$$

9. $Q_A + Q_B = Q'_A + Q'_B$
 $4\pi R^2 \sigma + 4\pi (3R)^2 (-\sigma) = 4\pi \epsilon_0 R V + 4\pi \epsilon_0 (3R) V$

$$V = -\frac{2\sigma}{\epsilon_0} R$$

12. By $N = N_0 e^{-\lambda t}$

$$\text{We have } \frac{9}{16} = e^{-\lambda t} \Rightarrow \frac{3}{4} = e^{-\lambda t/2}$$

13. If one goes through the path (find yourself) then only one battery comes into the circuit. Because this path will have highest charge on capacitor.

$$q = CV \Rightarrow q = (6 \times 10) = 60 \mu\text{C}$$

14. $P = \frac{NE}{t} \Rightarrow \frac{N}{t} = \frac{P}{E} = \frac{10^3}{200 \times 10^6 \times 1.6 \times 10^{-19}}$

15. Magnetisation $\propto \frac{H}{T}$.

18. For electron

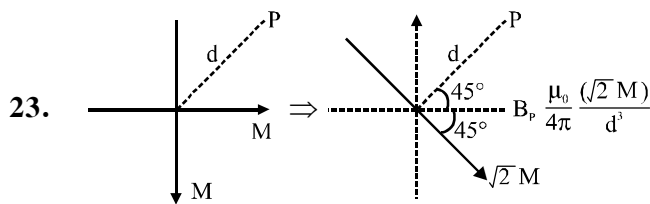
$$\lambda = \frac{h}{p} = \sqrt{\frac{150}{v}} \text{ \AA} = \sqrt{\frac{150}{54}} \text{ \AA} = 1.67 \text{ \AA}$$

For first diffraction maxima

$$D \sin \phi = \lambda \Rightarrow D = \frac{1.67}{\sin 50^\circ} = 2.15 \text{ \AA}$$

20. $\lambda = \frac{h}{p} \Rightarrow \frac{\Delta \lambda}{\lambda} = \frac{\Delta p}{p}$

$$p = \frac{\Delta p}{\frac{\Delta \lambda}{\lambda}} = \frac{\Delta p}{\frac{0.5}{100}} = 200 \Delta p$$



25. If distance between the field lines become half then field will become 4 times

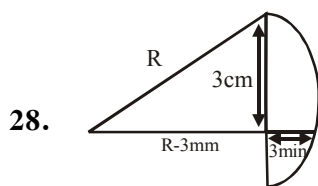
$$\mu_r = \frac{B}{B_0} = \frac{4B_0}{B_0} = 4$$

$$x = \mu_r - 1 = 3 \Rightarrow \vec{I} = 3\vec{H}$$

27. Assume charge an inner shell is q' .
Net electric potential on inner shell

$$V = \frac{Kq'}{r} + \frac{Kq}{3r} = 0$$

$$q' = -\frac{q}{3}$$



From trigonometry,
 $R^2 = (3)^2 + (R-0.3)^2 \Rightarrow R \approx 15 \text{ cm}$

$$\mu_{\text{lens}} = \frac{3 \times 10^8}{2 \times 10^8} = 1.5$$

\therefore from Lens maker formula,

$$\frac{1}{f} = \left(\frac{\mu_L}{\mu_s} - 1 \right) \left(\frac{1}{R_1} - \frac{1}{R_2} \right) = 0.5 \left(\frac{1}{15} \right) = \frac{1}{30}$$

$$\Rightarrow f = 30 \text{ cm}$$

31. $\omega L = \frac{1}{\omega C} \Rightarrow \omega = \frac{1}{\sqrt{10^{-3} \times 10^{-5}}} = 10^4$

$$X_L = X_C = \omega L = 10 \Omega$$

33. $\Delta q = \text{Area of I-t curve} = \frac{4 \times 0.1}{2} = 0.2$

$$|\Delta q| = \frac{|\Delta \phi|}{R} \Rightarrow |\Delta \phi| = 0.2 \times 10 = 2 \Omega$$

34. The Superdense material body and earth will move towards each other. Let earth moves distance x and the body moves rest $(h-x)$ distance. So $Mx = 2M(h-x)$

$$\Rightarrow x = \frac{2h}{3} \Rightarrow h-x = \frac{h}{3}$$

Here $h \ll R$ so g may be assume constant so

$$\text{required time } t = \sqrt{\frac{2(h/3)}{g}} = \sqrt{\frac{2h}{3g}}$$

36. As $v \propto \frac{1}{\sqrt{r}} \Rightarrow \frac{V_A}{V_B} = \sqrt{\frac{r_B}{r_A}}$

$$\Rightarrow \frac{3V}{V_B} = \sqrt{\frac{R}{4R}} = \frac{1}{2} \Rightarrow V_B = 6V$$

37. $e = \frac{\phi_1 - \phi_2}{\Delta t} = \frac{B_0 A_0 - 0}{t_0}$

$$\Delta H = \frac{e^2}{R} \Delta t = \left(\frac{B_0 A_0}{t_0} \right)^2 \frac{t_0}{2} = \frac{B_0^2 A_0^2}{R t_0}$$

41.

Work done by external agent $W = U_f - U_i = 2U$

42. T.P.D. = $\frac{ER}{R+r} \Rightarrow \frac{E}{2} = \frac{E \times 2}{2+r}$

$$\Rightarrow 2+r = 4 \Rightarrow r = 2 \Omega$$

43. Resistance of shorter part

$$= R_1 = \frac{120}{360} \times 9 = 3 \Omega$$

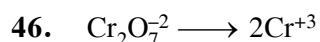
$$\text{Resistance of bigger part } R_2 = \frac{240}{360} \times 9 = 6\Omega$$

$$R_{AB} = R_1 + R_2 = 2\Omega$$

$$44. R_{\text{eff}} = 15\Omega$$

$$I = \frac{V}{r_{\text{eff}}} = \frac{15}{15} = 1\text{A}$$

$$45. P = \frac{(160)^2}{(200)^2} \times 100 = \frac{16}{25} \times 100 = 64\text{ W}$$



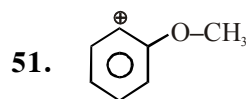
$$x = +6 \quad x = +3$$

$$2x = +12 \quad 2x = +6$$

0 No. decrease by 6 unit

1 mol $\text{Cr}_2\text{O}_7^{2-}$ needed 6 mol e^- or 6 F charge.

47. Compound which have chiral-C, can be exist in racemic mixture, so can be resolve



(+)ve on double bond, no resonance of cation

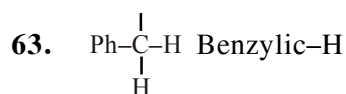
60. For zero order $x = kt$

$$\therefore t_{3/4} = \frac{3a}{4k}$$

$$t_{1/2} = \frac{a}{2k}$$

$$\therefore \frac{t_{3/4}}{t_{1/2}} = \frac{3}{2}$$

62. NCERT Page No. 139 (XII Part-I)



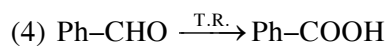
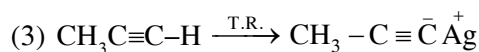
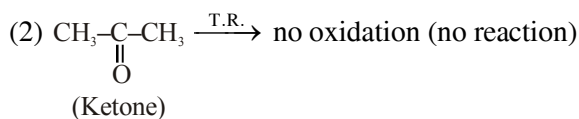
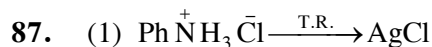
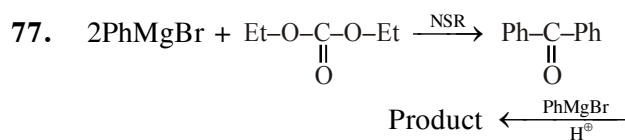
66. For tetrahedral splitting configuration is eg, t_{2g} चतुष्फलकीय विपाटन के विन्यास का क्रम eg, t_{2g} होता है।

68. $[\text{Co}(\text{C}_2\text{O}_4)_3]^{4-}$ is paramagnetic अनुचुम्बकीय होता है।

69. E_2 reaction

71. Electrophile will attack according to $-\text{OH}$ (+M)

73. Acid which is more acidic than H_2CO_3



(Ald.)

91. NCERT-XII Pg. # 20 (E), 21 Hindi

92. NCERT-XII Pg. # 31 (E), 33 Hindi

94. NCERT-XII Pg. # 31 (E), 33 Hindi

96. NCERT-XII Pg. # 23 (E), 24 Hindi

97. NCERT-XII Pg. # 27

101. NCERT-XII Pg. # 175 Para-2

102. NCERT-XII Pg. # 131 Line-7

103. NCERT-XII Pg. # 132 Para-2

104. NCERT-XII Pg. # 140 Para-4

105. NCERT-XII Pg. # 141 Line-1

107. NCERT-XII Pg. # 131 Para-1

108. NCERT-XII Pg. # 214 Line-8

109. NCERT-XII Pg. # 177 Para-4

110. NCERT-XII Pg. # 174 Table-9.1

112. NCERT-XII Pg. # 177 Para-2

113. NCERT-XII Pg. # 177 Para-3

114. NCERT-XII Pg. # 175 Para-2

115. NCERT-XII Pg. # 175 Table-9.2

116. NCERT : Pg. # 231 (E).

117. NCERT : Pg. # 230 (E).

118. NCERT : Pg. # 169 (E).

119. NCERT : Pg. # 169, 166 (E).

120. NCERT : Pg. # 168 (E).

121. NCERT : Pg. # 48, 49 (E), 52, 53 (H).

122. NCERT : Pg. # 43 (E), 46 (H).

123. NCERT : Pg. # 60, 61 (E), 67, 68 (H).

124. NCERT : Pg. # 53 (E), 57 (H).

126. NCERT Pg. # 149 (E)

127. NCERT Pg. # 147 (E)

128. NCERT Pg. # 157 (E)

129. NCERT Pg. # 158 (E)

130. NCERT Pg. # 158 (E)

131. NCERT XII Pg. # 154 (E)

134. NCERT XII Pg. # 157 (E)

135. NCERT XII Pg. # 156 (E)

141. NCERT XII Pg. # 76, 77.

142. NCERT XII Pg. # 78.

143. NCERT XII Pg. # 81, 82.

144. NCERT XII Pg. # 116.

145. NCERT XII Pg. # 85.

147. NCERT XII Pg. # 204.

148. NCERT XII Pg. # 183, 186, 187.

149. NCERT XII Pg. # 203.

151. NCERT XII Pg. # 201.

152. NCERT XII Pg. # 209.

153. NCERT XII Pg. # 213.

157. NCERT XII Pg. # 116, 117.