CLASSROOM CONTACT PROGRAMME
(Academic Session : 2024 - 2025)

ENTHUSIAST COURSE
PHASE : MEA,B,C,D,F,G,H,L,M,N,O,P,Q,R,S,U & V
TARGET : PRE-MEDICAL-2025

Test Type : **MAJOR** Test Pattern : **NEET (UG)**

TEST DATE : 11-01-2025

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.	4	4	2	2	2	4	2	2	4	1	4	3	3	3	2	4	4	2	1	4	2	4	1	3	2	2	1	4	3	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	2	1	2	4	2	1	1	4	1	2	2	4	4	4	3	4	2	1	3	4	4	2	3	3	2	4	1	2	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.	1	1	4	2	1	2	1	1	4	3	4	1	3	2	3	2	3	3	3	2	2	1	4	2	4	3	1	4	4	2
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	2	2	1	2	4	1	3	2	4	3	2	1	2	4	4	3	1	1	1	4	1	2	4	3	4	3	3	1	3
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	2	4	1	1	2	2	4	4	4	1	1	3	2	2	3	3	1	3	2	3	4	3	4	4	2	4	3	2	1
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.	1	2	2	1	4	4	2	2	3	1	4	3	3	2	1	3	2	1	2	2	4	2	3	1	3	1	2	1	4	3
Q.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200										
A.	3	1	1	3	2	3	4	2	2	1	3	2	1	1	1	4	2	1	4	1										

HINT – SHEET

SUBJECT : CHEMISTRY

SECTION-A

7. Ans (2)
NCERT-XI, Pg. # 284 (part - IInd)

15. Ans (2)
cis isomer do not have plane of symmetry and will show optical isomerism.

16. Ans (4)
NCERT XII Pg. # 238 (Part-I)

26. Ans (2)
$r = k[A]^{\alpha}\,[B]^{\beta}$

$\frac{1.6}{3.2} = \left(\frac{0.5}{1}\right)^{\beta}$

$\beta = 1$

$\frac{1.6}{3.2} = \left(\frac{0.5}{1}\right)^{\alpha}$

$\alpha = 1$

$r = k[A]^1\,[B]^1$

27. Ans (1)
Intermolecular H-bonding occurs between phenolic proton and nitrogen of aniline.

28. Ans (4)
$Fe_2(SO_4)_3 \rightarrow 2Fe^{+3} + 3\,SO_4^{2-}$

n–factor = 6

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

29. Ans (3)
From slow step.

$r = K[P]\,[Q_2]$ .....(I)

from reversible step

$K_c = \frac{[P]^2}{[P_2]}$

$[P] = [P_2]^{1/2}\,K_c^{1/2}$ ...(II)

From (I) & (II)

$r = K[P_2]^{1/2}\,[Q_2]\,K_c^{1/2}$

$r = K'\,[P_2]^{1/2}\,[Q_2]^1$

order =1 + 1/2 = 1.5

30. Ans (4)

For non-ideal solution $\Delta S_{mix} > 0$

31. Ans (2)

BP $\propto$ iC

0.1 m glucose i × C $= 1 \times 0.1 = 0.1$

0.1 m K_2SO_4 $= 3 \times 0.1 = 0.3$

0.1 m NaCl $= 2 \times 0.1 = 0.2$

0.01 m $K_4[Fe(CN)_6]$ $= 5 \times 0.01 = 0.05$

32. Ans (2)

HCl and KOH both are strong acid and strong base.

33. Ans (1)

$$W = \frac{Mit}{F\,n} = \frac{63.5 \times 1.5 \times 10 \times 60}{96500 \times 2}$$

$W = 0.29$ g

34. Ans (2)

Given temperature coefficent is 2 & increased temp is 50°C.

$K_{80} = K_{30}\,(2)^5 = 32\,(K_{30})$

35. Ans (4)

Number of steps = number of peak in graph, step having maximum Ea is RDS.

SECTION-B

41. Ans (2)

$[Ni(dmg)_2]$ having 4 rings

42. Ans (2)

$[Cr(H_2O)_6]Cl_3$ and $[Cr(H_2O)_5Cl]Cl_2.H_2O$ is hydrate isomerism

46. Ans (3)

NCERT (OLD) Pg#103,104

47. Ans (4)

$M^{+2} + 2e^- \longrightarrow M$

$E^o = -1.18$ V

$\Rightarrow M \longrightarrow M^{2+} + 2e^- \quad E^\circ = 1.18$ V

$$E_{O.P} = E^o_{O.P} - \frac{0.059}{2}\log\,[Mn^{+2}]$$

$$= 1.18 - \frac{0.059}{2}\log\frac{0.1}{1}$$

$= 1.18 + 0.03 = 1.21$ V

48. Ans (2)

$\pi_1 = \pi_2$

$C_1\,RT = C_2\,RT$

$$\left(\frac{5}{342}\right) \times \frac{1000}{100} = \left(\frac{1}{M_w}\right) \times \frac{1000}{100}$$

$$M_w = \frac{342}{5} = 68.4$$

49. Ans (1)

Since blood is isotonic with approx 0.16 M NaCl.

50. Ans (3)

$r_i = k[A][B]^{1/3}$

$$r_f = k \times \frac{[A]}{2} \times (8[B])^{1/3}$$

$= k[A][B]^{1/3}$

$r_f = r_i$

SUBJECT : BOTANY

SECTION-A

51. Ans (4)

NCERT-XI, Pg. # 73, 76

52. Ans (4)

NCERT-XI, Pg. # 74

53. Ans (2)

NCERT-XI, Pg. # 73, 75

54. Ans (3)

NCERT-XI, Pg. # 62 to 64

55. Ans (3)

NCERT-XI, Pg. # 63

56. Ans (2)

NCERT-XI, Pg. 66

57. Ans (4)

NCERT-XII, Pg. # 14

58. Ans (1)

NCERT-XII, Pg. # 5

59. Ans (2)

NCERT-XII, Pg. # 4, 5

60. Ans (3)

NCERT-XII, Pg. # 13

61. **Ans (1)**
NCERT-XII, Pg # 70(E)/78(H)

62. **Ans (1)**
NCERT-XII, Pg # 63(E)/70(H)

63. **Ans (4)**
NCERT-XII, Pg # 61,62,69

64. **Ans (2)**
NCERT-XII, Pg. # 64

65. **Ans (1)**
NCERT-XII, Pg. # 55, 56

66. **Ans (2)**
NCERT-XII, Pg. # 74, 73

67. **Ans (1)**
NCERT-XII, Pg. # 69 and 74

68. **Ans (1)**
NCERT-XII, Pg. # 102, 103, 105

69. **Ans (4)**
NCERT-XII, Pg. # 84, 85, 96

70. **Ans (3)**
NCERT-XII, Pg. # 90

71. **Ans (4)**
NCERT-XII, Pg. # 94, 95

72. **Ans (1)**
NCERT-XII, Pg. # 94-95

73. **Ans (3)**
NCERT-XII, Pg. # 81

74. **Ans (2)**
NCERT-XII, Pg. No. 103

75. **Ans (3)**
NCERT-XII, Pg. # 207

76. **Ans (2)**
NCERT-XII, Pg. # 214

77. **Ans (3)**
NCERT-XII, Pg. # 213

78. **Ans (3)**
NCERT-XII, Pg. # 212, 213

79. **Ans (3)**
NCERT-XII, Pg # 209-210

80. **Ans (2)**
NCERT-XII, Pg. # 200

81. **Ans (2)**
NCERT-XII, Pg. # 198

82. **Ans (1)**
NCERT-XII, Pg. # 201

83. **Ans (4)**
NCERT-XII, Pg. # 223, 224, 225

84. **Ans (2)**
NCERT-XII, Pg. # 225

85. **Ans (4)**
NCERT-XII, Pg. # 217-21

SECTION-B

86. **Ans (3)**
NCERT-XI, Pg. # 74, 75

87. **Ans (1)**
NCERT-XI, Pg. # 72

88. **Ans (4)**
NCERT-XI, Pg. # 64

89. **Ans (4)**
NCERT-XI, Pg. #63, 64, 65, 66

90. **Ans (2)**
NCERT-XII, Pg. # 11

91. **Ans (3)**
NCERT-XII, Pg. # 61

92. **Ans (2)**
NCERT-XII, Pg. # 67, 73, 74

93. **Ans (2)**
NCERT-XII, Pg. # 69 and 74, 75

95. **Ans (2)**
NCERT-XII, Pg # 96,101,102,93(E) / 102,106,112,113(H)

96. **Ans (4)**
NCERT-XII, Pg. # 99

97. **Ans (1)**
NCERT-XII, Pg # 20, 30, 192, 202

98. Ans (3)
NCERT-XII, Pg. # 197

99. Ans (2)
NCERT-XII, Pg. # 225

100. Ans (4)
NCERT-XII, Pg. # 218

SUBJECT : ZOOLOGY

SECTION-A

101. Ans (3)
NCERT XII Pg. # 35, 36, 37

103. Ans (1)
NCERT-XII Pg. # 50-51

104. Ans (2)
NCERT XII Pg # 44

106. Ans (4)
NCERT XII Pg # 31,32

107. Ans (3)
A = Umbilical cord,
B = Placental villi,
C = Cavity of uterus,
D = Yolk Sac,
E = Embryo

108. Ans (1)
NCERT XII Pg # 26,27,28,29

109. Ans (1)
NCERT Pg # 46

111. Ans (4)
NCERT (XIIth) Pg. # 64

117. Ans (3)
NCERT XII Pg # 153, para 8.2.5 & 8.2.6, Pg 158 para 8.4, Pg 159 para 8.5

118. Ans (3)
NCERT (XIIth) Pg. # 162

121. Ans (3)
NCERT XIIth Pg.#138

122. Ans (2)
NCERT Pg. # 140 Para 7.9

123. Ans (4)
NCERT-XII, Pg. # 151, 153, 158

128. Ans (4)
NCERT, Pg # 171(E)/188(H)

133. Ans (3)
NCERT Pg. # 178,179,180,181

SECTION-B

138. Ans (1)
NCERT Pg # 35-36

139. Ans (3)
NCERT (XII) Pg. # 54

144. Ans (4)
NCERT Pg # 151

148. Ans (3)
NCERT Pg. # 181, 188

SUBJECT : PHYSICS

SECTION-A

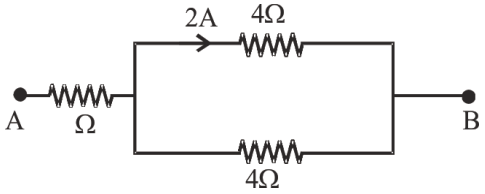
151. Ans (1)
The electric potential at any point on the perpendicular bisector of two equal and opposite charges is zero. Therefore, the potential at A and B is zero. Work done in transferring the charge from A to B is given by $W = q \times \Delta V$. But $\Delta V = 0$. Therefore, $W = 0$

Aliter : V is a function of only X. Hence, the potential gradient which is the electric field is also along X-axis. Since equipotential surfaces are always perpendicular to $\vec{E}$, the yz planes are equipotential surfaces.

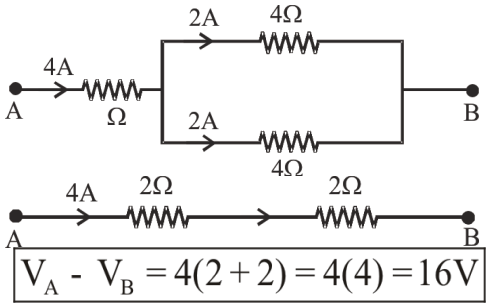
153. Ans (2)
$\phi = \frac{Q_{enclosed}}{\varepsilon_0} = \frac{2q}{\varepsilon_0}$

156. Ans (4)
In non uniform electric field
Torque and force both may be non-zero

158. Ans (2)

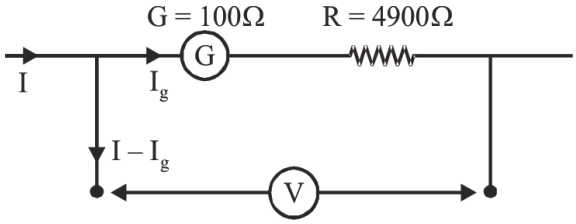


Since both resistance of 4Ω then current in other 4Ω would be 2A.



$V_A - V_B = 4(2+2) = 4(4) = 16V$

160. Ans (1)



$V = I_g \times (100 + 4900)$

$I_g = \frac{5}{5000} = \frac{1}{1000}A$

Now

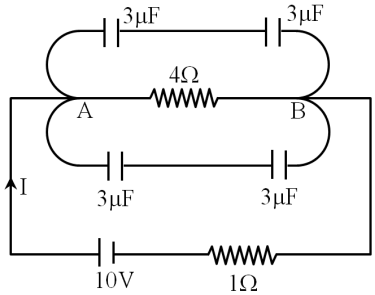
$2V = I_g(100 + 4900 + R)$

$R = \frac{2 \times 5}{I_g} - 5000$

$= 10 \times 1000 - 5000$

$= 5000\ \Omega$

161. Ans (4)



At steady state

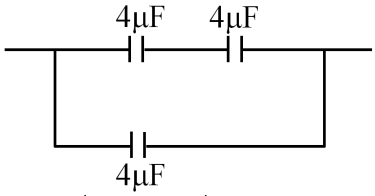
$I = \frac{10}{(4+1)}A = 2A$

$V_{AB} = I(4) = 2 \times 4 = 8V$

potential across each capacitor = 4V

Now, $Q = CV = 3\mu \times 4 = 12\mu C$

162. Ans (3)



$C_{eq} = \left(\frac{4 \times 4}{4+4} + 4\right)\mu F$

$= (2+4)\mu F$

$= 6\mu F$

163. Ans (3)

Since aluminium is a metal, therefore field inside this will be zero. Hence it would not affect the field in between the two plates, so capacity = $\frac{q}{V} = \frac{q}{Ed}$ remains unchanged.

164. Ans (2)

$r = \frac{mv}{qB}$, $\quad \because r_A > r_B$

165. Ans (1)

for $B_0 = 0$

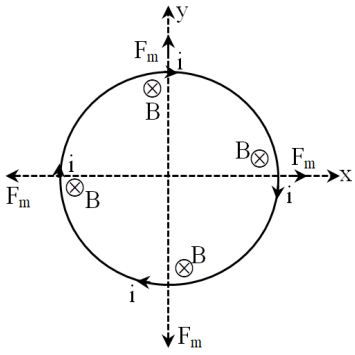
$|B_{wire}| = |B_{arc}|$ and in opposite direction

$\frac{\mu_0 i}{4\pi R} + \frac{\mu_0 i}{4\pi R} = \frac{\mu_0 i}{4\pi R}\theta$

$\Rightarrow \frac{\mu_0 i}{4\pi R} = \frac{\mu_0 i}{4\pi R}\theta$

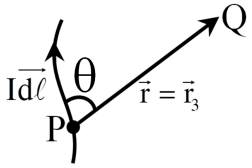
$\Rightarrow \theta = 2$ radian

169. Ans (2)



170. Ans (2)

By Biot-Savart law



$B_Q = \frac{\mu_0}{4\pi}\frac{i\vec{d\ell} \times \vec{r}}{r^3}$ (where, $\vec{r} = \vec{r}_3$)

171. Ans (4)

$B = \mu_0 nI$

$20 \times 10^{-3} = 4\pi \times 10^{-7} \times 2000 \times I$

$\Rightarrow I = 7.957$ A

$I \simeq 8$A

173. Ans (3)

Power output of the secondary, $P_S = V_S I_S$

$\Rightarrow I_S = \dfrac{P_S}{V_S} = \dfrac{12 \times 10^3}{1000} = 12$A

But $\dfrac{I_P}{I_S} = \dfrac{N_S}{N_P} \Rightarrow I_P = I_S \times \dfrac{N_S}{N_P} = \dfrac{12 \times 2000}{400} = 60$ A

175. Ans (3)

$i = 10 \sin 2\omega t$

$i_{rms} = \dfrac{10}{\sqrt{2}} \approx 7$A and $i_{avg} = 0$

AC meter measure rms value while DC meter measure average value.

176. Ans (1)

$\dfrac{1}{f} = \left(\dfrac{\mu_L}{\mu_m} - 1\right)\left(\dfrac{1}{R_1} - \dfrac{1}{R_2}\right)$

$\dfrac{1}{f} = \left(\dfrac{1.5}{1.75} - 1\right)\left(\dfrac{-1}{R} - \dfrac{1}{R}\right)$

$\Rightarrow f = 3.5\,R$ (convergent lens)

177. Ans (2)

$8 = i + e - A$

$30 = 15 + 60 - A$

$\Rightarrow A = 75 - 30$

$= 45°$

180. Ans (3)

upward shift produce by slab

$\Delta x = t\left(1 - \dfrac{1}{\mu}\right)$

$= 3\left(1 - \dfrac{1}{\left(\frac{3}{2}\right)}\right)$ cm

$= 3\left(1 - \dfrac{2}{3}\right)$ cm

$= 3 \times \dfrac{1}{3}$cm

$= 1$ cm upward

181. Ans (3)

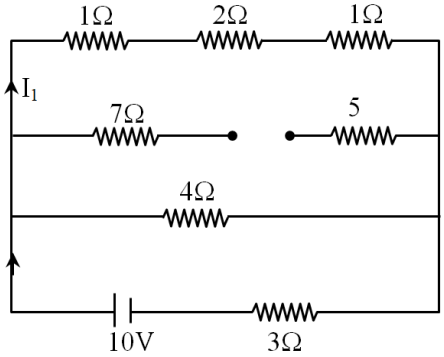
For path difference λ, phase difference = 2π rad

For path difference $\dfrac{\lambda}{4}$, phase difference = $\dfrac{\pi}{2}$ rad

As $K = 4I_0$. so, intensity at given point where path difference is $\dfrac{\lambda}{4}$

$K' = \dfrac{K}{4} + \dfrac{K}{4} + 2\sqrt{\dfrac{K}{4}\dfrac{K}{4}}\cos\dfrac{\pi}{2} = \dfrac{K}{2}$

182. Ans (1)



$I = \dfrac{10}{R_{eq}} = \dfrac{10}{5} = 2$A

$I_1 = \dfrac{I}{2} = 1$A

183. Ans (1)

The given relation is satisfied if A = 0 and B = 0

184. Ans (3)

Wave length of green light is threshold wavelength. Hence for emission of electron, wavelength of incident light < wavelength of green light.

185. Ans (2)

$\lambda \propto \dfrac{1}{\sqrt{E_K}} \Rightarrow E_K \propto \dfrac{1}{\lambda^2}$

As $E_x \longrightarrow 16\,E_K$

$\therefore \lambda \longrightarrow \dfrac{\lambda}{4}$

$\dfrac{\Delta\lambda}{\lambda} \times 100 = -75\%$

SECTION-B

186. Ans (3)

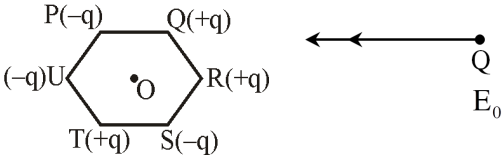
$E_1 = \dfrac{kQ}{R^2}$

$E_2 = \dfrac{k(2Q)}{R^2} \Rightarrow E_2 = \dfrac{2kQ}{R^2}$

$E_3 = \dfrac{k(4Q)R}{(2R)^3} \Rightarrow E_3 = \dfrac{kQ}{2R^2}$

$E_3 < E_1 < E_2$

187. Ans (4)



$E_0 = \frac{2kq}{r^2}$

$E_o = 2\left(\frac{kq}{r^2}\right)$

188. Ans (2)

$\Rightarrow G = \frac{S_I}{S_V} = \frac{10}{2} = 5\Omega$

$\Rightarrow I_g = \frac{\text{Total No. of division}}{S_I} = \frac{150}{10}\text{mA}$

$= 15$ mA

$\Rightarrow V = 150$ volt

As $V = Ig(R + G)$

$150 = 15 \times 10^{-3}(R + 5)$

$\Rightarrow R = 9995\ \Omega$

189. Ans (2)

$\frac{E_1}{r_1} = \frac{E_2}{r_2} = ---- = \frac{E_n}{r_n} = k$

$i = \frac{E_1 + E_2 + ---+ E_n}{r_1 + r_2 + ---+ r_n}$

$= \frac{k(r_1 + r_2 + ---+ r_n)}{r_1 + r_2 + ---+ r_n} = K$

190. Ans (1)

Resistance of 1 bundle $= \frac{R}{2}$

Resistance of 2 bundle $= \frac{R}{2n^2}$

$\therefore$ Req $= \frac{R}{2} + \frac{R}{2n^2}$

$= \frac{R}{2}\left[1 + \frac{1}{n^2}\right]$

192. Ans (2)

$B_0 = \frac{\mu_0 i}{4a} - \frac{\mu_0 i}{4(2a)} + \frac{\mu_0 i}{4(4a)} - \frac{\mu_0 i}{4(8a)} + \ldots\ldots\infty$

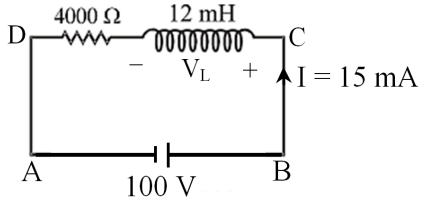
$B_0 = \left(\frac{\mu_0 i}{4a} + \frac{\mu_0 i}{4(4a)} + \ldots\ldots\right) - \left(\frac{\mu_0 i}{4(2a)} + \frac{\mu_0 i}{4(8a)} + \ldots\ldots\infty\right)$

$= \frac{\mu_0 i}{4a}\left(1 + \frac{1}{4} + \frac{1}{16} + \ldots\ldots\right) - \left(\frac{\mu_0 i}{4a}\left(\frac{1}{2} + \frac{1}{8} + \ldots\ldots\infty\right)\right)$

$= \frac{\mu_0 i}{4a}\left(\frac{1}{1 - \frac{1}{4}}\right) - \frac{\mu_0 i}{4a}\left(\frac{\frac{1}{2}}{1 - \frac{1}{4}}\right)$

$= \frac{\mu_0 i}{4a}\left(\frac{4}{3} - \frac{2}{3}\right) = \frac{\mu_0 i}{6a}$

193. Ans (1)



By KVL in loop ABCDA

$100 - V_L - I(4000) = 0$

$\Rightarrow V_L = 100 - (15 \times 10^{-3} \times 4000)$

$\Rightarrow V_L = (100 - 60)V = 40$ V

194. Ans (1)

$\Delta v = \vec{\ell} \cdot (\vec{v} \times \vec{B}) = 2$ Volts.

196. Ans (4)

$\frac{f_0}{f_e} = 20,\ f_0 + f_e = 2.1$

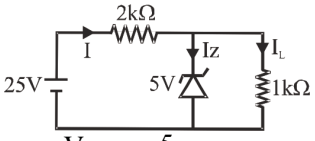
$f_0 = 200$cm, $f_e = 10$cm,

final magnification $= f_0\left[\frac{1}{D} + \frac{1}{f_e}\right] = 28$

197. Ans (2)

$\sin\theta = \frac{2\lambda}{a}$

198. Ans (1)



$I_L = \frac{V_Z}{R_L} = \frac{5}{1k\Omega} = 5$ mA

$I = \frac{V - V_Z}{R_s} = \frac{25 - 5}{2k\Omega} = 10$ mA

$I_Z = I - I_L = 10 - 5 = 5$ mA

199. Ans (4)

Energy released in the fission of one nucleus = 200 MeV

$= 200 \times 10^6 \times 1.6 \times 10^{-19}$ J $= 3.2 \times 10^{-11}$ J

$P = 16KW = 16 \times 10^3$ Watt

Now, number of nuclei required per second

$n = \frac{P}{E} = \frac{16 \times 10^3}{3.2 \times 10^{-11}} = 5 \times 10^{14}$.

200. Ans (1)

$\frac{1}{\lambda_1} = R\left(\frac{1}{4} - \frac{1}{9}\right) \Rightarrow \lambda_1 = \frac{4 \times 9}{5R}$

Similarly

$\frac{1}{\lambda_2} = R\left(\frac{1}{4} - \frac{1}{4^2}\right)$

$\Rightarrow \lambda_2 = \frac{16}{3R} = \frac{16}{3} \times \frac{5\lambda}{4 \times 9} = \frac{20}{27}\lambda$