Enthusiast, Leader & Achiever Course

PHASE : (ALL PHASE)

TARGET : PRE-MEDICAL : 2020

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

TEST DATE : 01-07-2020

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	3	4	1	4	1	3	1	2	4	1	1	4	2	3	2	3	1	3	1	4	4	4	3	2	4	1	1	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.	3	3	1	2	2	3	3	3	4	1	3	2	3	3	3	3	2	3	2	1	1	4	1	1	1	4	1	3	3	2
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	2	3	4	2	4	1	3	3	4	1	4	4	1	3	1	1	2	1	1	4	4	3	3	4	3	1	1	2	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.	4	4	1	4	3	2	3	3	3	2	3	4	3	1	2	4	3	3	3	1	2	2	2	4	4	4	3	1	3	4
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	3	2	2	4	2	4	3	1	2	1	2	3	2	1	3	4	2	1	4	3	3	2	4	1	3	3	2	2	4
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.	4	3	4	4	3	2	4	3	1	3	4	1	3	3	4	4	2	3	3	3	2	2	2	1	2	3	3	1	2	2

HINT – SHEET

1. Ans (2)

According to question $(f)_{ice} = (f)_{water}$

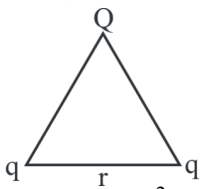
$$\frac{1}{4\pi\varepsilon_0(\varepsilon_r)_{ice}}\frac{q_1q_2}{(r_{ice})^2} = \frac{1}{4\pi\varepsilon_0(\varepsilon_r)_{water}}\cdot\frac{q_1q_2}{(r_{water})^2}$$

$$\left(\frac{(\varepsilon_r)_{ice}}{(\varepsilon_r)_{water}}\right) = \left(\frac{r_{water}}{r_{ice}}\right)^2 \Rightarrow$$

$$\frac{(\varepsilon_r)_{ice}}{80} = \left(\frac{5}{25}\right)^2$$

$$\frac{(\varepsilon_r)_{ice}}{80} = \frac{1}{25} \Rightarrow (\varepsilon_r)_{ice} = \frac{80}{25} = \frac{16}{5} = 3.2$$

4. Ans (1)



$$\frac{2kQq}{r} + \frac{kq^2}{r} = 0$$

$$2Q + q = 0$$

$$Q = \frac{-q}{2}$$

5. Ans (4)

$V = -5x + 3y + \sqrt{15}\,z$

$E_x = -\frac{dV}{dx} = 5\ ;\ E_y = -3\ ;\ E_z = -\sqrt{15}$

$\Rightarrow \quad E = \sqrt{25+9+15}$

$\Rightarrow \quad E = 7$

6. Ans (1)

the value of acceleration is

$$a = \frac{6-0}{1} = 6m/s^2$$

As direction of force reverse after one second (magnitude remains same) so car will comes at rest after two second after travelleing distance 6m and in next one second its velocity will be -6m/s change in momentume and change in KE will be

$\Delta\vec{p} = -6 - 6 = -12kgm/s$ and $\Delta KE = 0$

7. Ans (3)

Common potential = $\frac{20\times 6+0}{9}=\frac{40}{3}$V

Find charge in $C_2 = CV_{cm} = 3\times\frac{40}{3} = 40\mu C$

12. Ans (1)

$$P=\frac{W}{t}=Vi \Rightarrow V=\frac{W}{it}=\frac{1000}{2\times 6\times 60}=1.38\,V$$

14. Ans (2)

$$R_H = \frac{V}{I_g} - R_g = \frac{20}{0.01} - 20$$

$= 2000 - 20 = 1980\ \Omega.$

15. Ans (3)

$R_1 = \frac{(110)^2}{100} = 121\ \Omega$

$R_2 = \frac{(220)^2}{400/3} = 363\ \Omega$

$R_{total} = 121 + 363 = 484\ \Omega$

total power = $\frac{(220)^2}{484} = 100W$

16. Ans (2)

At any instant the radius of loop r, will satisfy the following relation

$2\pi r + 2vt = 2\pi R$

$= R = \frac{vt}{\pi}$

The flux of the magnetic field at any instant, will be

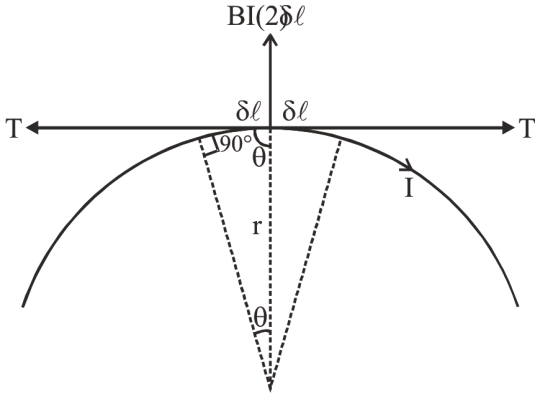
$\phi_B = \pi r^2 B$

So the induced emf is

$$E = \left|-\left(\frac{d\phi}{dt}\right)\right| = 2\pi Br\frac{dr}{dt} = 2\pi B\left(R-\frac{vt}{\pi}\right)v$$

$E = BRv$

17. Ans (3)



$2T\cos(90-\theta) = BI(2\delta l)$

$\Rightarrow$ $T\sin\theta = BI\delta$

$\Rightarrow$ $T\times\frac{\delta\ell}{r} = BI\delta\ell$

$\Rightarrow$ $T = BIr = \frac{BIL}{2\pi}$

18. Ans (1)

B for solenoid = $\mu_0 ni = \mu_0\frac{500}{0.4}\times 3$

Magnetic moment of the coil, M = iAN

$= 0.4\times\pi\times(0.01)^2\times 10$

$= 4\pi\times 0.0001$

$\tau = MB\sin 90°$

$= 4\pi\times 10^{-7}\times\frac{500}{0.4}\times 3\times 4\pi\times 0.0001$

$= 6\pi^2\times 10^{-7}$ N-m

19. Ans (3)

$\vec{B} = 0.6\hat{i} + 0.4\hat{j} + 0.5\hat{k}$, is a uniform magnetic field and in uniform magnetic field, net force on a bar magnet is zero.

22. Ans (4)

Eddy currents are always perpendicular to the variable magnetic field.

23. Ans (4)

$$x = \frac{B}{M} = \left(\frac{\mu_0 i}{2r}\right)\left(\frac{1}{i\pi r^2}\right) \text{ or } x\propto\frac{1}{r^3}$$

i.e. x will become x/8 when radius and current both are doubled.

25. Ans (2)

Order of $\lambda \rightarrow$ Radio > I.R. > Visible > X-rays

28. Ans (1)

$f = 10^{14}$ Hz

$E_0 = 4$ V/ m

$\varepsilon_o = 8.8 \times 10^{-12}$ C^2/N-m^2

Energy density of electric field

=

$\frac{1}{2}$ (Total energy density)

$= \frac{1}{2} \cdot \frac{1}{2} \varepsilon_0 E^2$

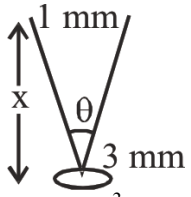
$= \frac{1}{2} \cdot \frac{1}{2} \{8.8 \times 10^{-12} \times 4^2\}$

$= 35.2 \times 10^{-12}$ J / m^3

30. Ans (4)

Convex lens, glass slab, prism and glass sphere they all disperse the light.

32. Ans (3)



$\theta = \frac{10^{-3}}{x} = \frac{1.22\lambda}{3 \times 10^{-3}}$

$\Rightarrow x = \frac{3 \times 10^{-6}}{1.2 \times 5 \times 10^{-7}} = 5m$

33. Ans (1)

For viewing far objects, concave lenses are used and for concave lens

u = wants to see = –60cm ; v = can see = –15 cm

so from $\frac{1}{f} = \frac{1}{v} - \frac{1}{u} \Rightarrow f = -20$ cm .

37. Ans (3)

$\lambda = \frac{h}{mv} = \frac{6.6 \times 10^{-34}}{2 \times 500} = \frac{6.6 \times 10^{-34}}{1000}$

$\lambda = 6.6 \times 10^{-37}$ m $= 6.6 \times 10^{-27}$Å

39. Ans (4)

$N_\alpha = \frac{A_i - A_f}{4} = \frac{238 - 206}{4} = 8$

$N\beta = Z_f - Z_i + 2N\alpha = 82 - 92 + 2(8) = 6$

41. Ans (3)

$A = A_0 e^{-\lambda t} = A_0 e^{-t/\tau}$; where mean life

$A_1 = A_0 e^{-t_1/T}$; $A_2 = A_0 e^{-t_2/T}$

$\therefore A_2 = A_0 e^{-t/T} = (A_1 e^{t_1/T})\, e^{-t_2/T} \Rightarrow A_2 = A_1 e^{(t_1 - t_2)/T}$

42. Ans (2)

In figure b,d and e P-crystals are more positive as compared to N-crystals.

44. Ans (3)

$I_C = \frac{10 - V_{CE}}{1\ k\Omega} = 5mA$

$I_B = \frac{I_C}{\beta} = \frac{5mA}{100} = 5 \times 10^{-5} A$

$R_B = \frac{10 - V_{BE}}{I_B} = \frac{10 - 0}{5 \times 10^{-5}} = 2 \times 10^5 \Omega$

46. Ans (3)

Total A atoms = all corner

$8 \times \frac{1}{8} = 1$

all face centre

total B atoms $= 6 \times \frac{1}{2} - \frac{1}{2}$

$= 3 - \frac{1}{2} = 2.5$

$\Rightarrow A_1B_{2.5} \Rightarrow A_2B_5$

48. Ans (3)

NCERT (XIIth) Part - I, Pg. # 21, (Para - 2)

52. Ans (4)

Fact based.

53. Ans (1)

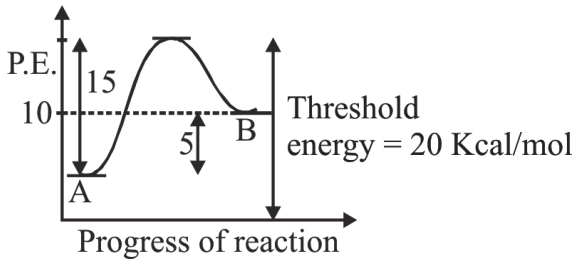
$\log k = 15.0 - \frac{10^6}{T}$

compare this relation with $\log k = \log A - \frac{E}{2.303R}$

we find $A = 10^{15}$.

$E = 1.9 \times 10^4$ J

54. Ans (1)



55. Ans (1)

$$\lambda_{eq} = \frac{\kappa \times 1000}{N} = \frac{G^* \times 1000}{R \times N}$$

$$\therefore \lambda_{eq} = \frac{1 \times 1000}{200 \times 0.01} = 500 \text{ ohm}^{-1} \text{ cm}^2 \text{ eq}^{-1}$$

56. Ans (4)

$2Y^- + X_2 \longrightarrow Y_2 + 2X^-$

X must be more oxidising agent

It $X_2 = F_2$ then $Y^- = Cl^- / Br^- / I^-$

60. Ans (2)

If volume of solution A = x litre

then volume of solution B = (2 – x) litre

$$N_{resultant} = \frac{N_1V_1 + N_2V_2}{\text{Total volume}}$$

$$0.2 = \frac{0.5 \times x + 0.1(2 - x)}{2}$$

$0.4 = 0.5\ x + 0.2 - 0.1\ x$

$$0.2 = 0.4\ x \Rightarrow x = \frac{0.2}{0.4} = \frac{1}{2} = 0.5$$

62. Ans (2)

$[Co(NH_3)_4Cl_2]$ does not form any ion in aqueous solution so no precipitate will be formed.

66. Ans (4)

$PH_3 + O_2 \longrightarrow P_2H_4$

white smoky

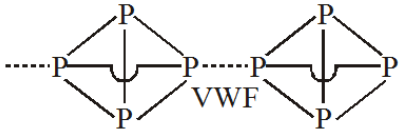
impurity

68. Ans (3)

$PCl_5 + H_2O \longrightarrow H_3PO_4 + HCl$

69. Ans (3)

White phosphorous exist in discrete P_4 units.



70. Ans (4)

Cu^+ form compound with $I^- \rightarrow Cu_2I_2$

Cu^{+2} is unstable with I^-

71. Ans (1)

MnO_4^{-2}

Mn has +6 O.S.

d^1 is paramagnetic shows d-d transition

72. Ans (4)

$Mn^{+3} \rightarrow Mn^{+2}$

$Co^{+3} \rightarrow Co^{+2}$

$Ce^{+4} \rightarrow Ce^{+3}$

All are good oxidising agent

73. Ans (4)

Zinc blende ore - Roasting

74. Ans (1)

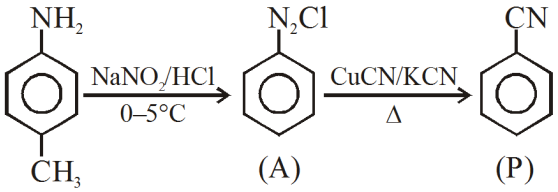
Impurities present in Fe-ore is SiO_2

SiO_2 can be remove by $CaCO_3$ to form $CaSiO_3$ as a slag.

75. Ans (3)

Ti/Zr/Bi are purify by Van-Arkel method.

76. Ans (1)



77. Ans (1)

α and β-D glucose are anomers.

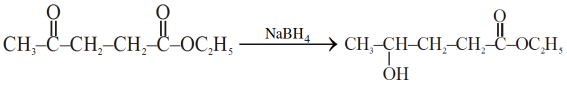
78. Ans (2)

Artificial rubber has styrene and 1,3-Butadiene monomers.

79. Ans (1)

It is antiseptic (Dettol)

80. Ans (1)



81. Ans (4)

$$Ph - \overset{14}{C}OOH + NaHCO_3 \rightarrow CO_2$$

82. Ans (4)

β-Keto acid give decarboxylation

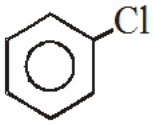
83. Ans (3)

Aldol condensation reaction

84. Ans (3)

1° alcohol react very slowly with lucas reagent.

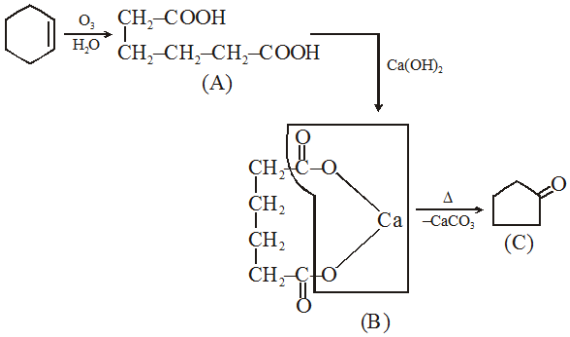
85. Ans (4)

 and CH_2=CH–Cl does not give S_N1 reaction.

86. Ans (3)

NH_3 give nucleophilic substitution with alkyl halide

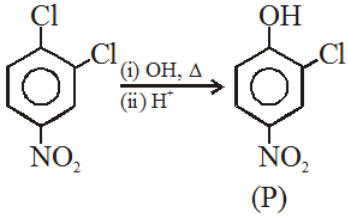
87. Ans (1)



88. Ans (1)

1-alkyne react with tollen's reagent while 2-alkyne does not react.

89. Ans (2)



90. Ans (3)

$$\text{Rate of ESR} \propto \frac{+M,\ +I}{-M,\ -I}$$

91. Ans (4)

NCERT Pg. # 133, para = 7.4

94. Ans (4)

NCERT XI Pg. # 134 Para 7.5

99. Ans (3)

NCERT XIIth Pg.#24 - 2.2.1

100. Ans (2)

NCERT XIIth Pg.#23

115. Ans (4)

NCERT-XII Pg. No 195

147. Ans (3)

NCERT-XII, Page # 187 (10.5)

148. Ans (2)

NCERT (XIIth) Pg. # 188 (E), 205 (H)

155. Ans (3)

NCERT-(XII) Pg # 156

156. Ans (2)

NCERT XII, Pg # 154

159. Ans (1)

NCERT Pg. # 158,159

160. Ans (3)

NCERT–XI, Pg. # 286, Fig. 18.3

161. Ans (4)

NCERT XII Pg. # 49/54(H)Para:3.4

164. Ans (3)

NCERT XII, Pg # 54

176. Ans (3)

NCERT (XIIth) Pg. # 88

177. Ans (3)

Module No. 2- Pg. No. # 125

178. Ans (1)

NCERT (XII) Pg. # 165, Para-9.1