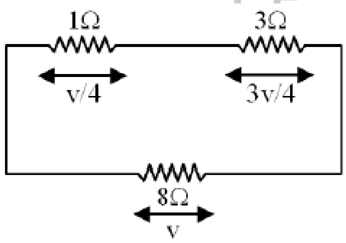
FT - 8 (FR) (NEET - CBSE, GSEB) (05 - 04 - 2026)

ANSWER KEY

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

PHYSICS:

1. Sol.(1)



Power across 8 Ω

$$= \frac{V^2}{R} = \frac{V^2}{8} = 4$$

$= V^2 = 32$

Power across 1Ω

$$= \frac{(V/4)^2}{1} = \frac{V^2}{16} = \frac{32}{16} = 2watt$$

2. Sol.(1)

$R \propto A^{1/3}$

$$\frac{R_{Al}}{R_{Te}} = \left(\frac{27}{125}\right)^{1/3}$$

$$\Rightarrow R_{Te} = \frac{5}{3} R_{Al}$$

3. Sol.(2)

By COLM: $p_f - p_i = 0$

$$\Rightarrow \vec{p}_{He} + \vec{p}_{Th} = 0 \left[K.E. = \frac{p^2}{2m} \right]$$

$$= \vec{p}_{He} = -\vec{p}_{Th}$$

But $K \propto \frac{1}{m}$ and $m_{He} < m_{Th}$ So $K_{He} > K_{Th}$

4. Sol.(3)

$$\frac{1}{f} = \left(\frac{\mu_2 - \mu_1}{\mu_1}\right)\left(\frac{1}{R_1} - \frac{1}{R_2}\right)$$

$$\Rightarrow \frac{1}{25} = \left(\frac{1.5-1}{1}\right)\left(\frac{1}{R} - \frac{1}{(-2R)}\right)$$

$$\Rightarrow \frac{2}{25} = \frac{3}{25} \Rightarrow R = \frac{75}{4} = 18.75$$

Ist surface radius = 18.75 cm

IInd surface radius = 37.50 cm

5. Sol.(2)

$$\sin\theta_C = \frac{1}{\mu}$$

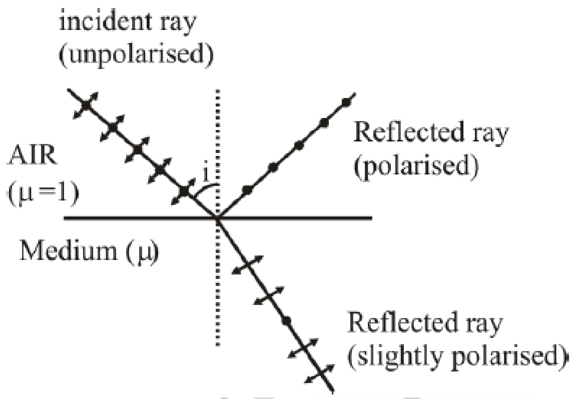
$$\mu = \frac{1}{\sin\theta_C} = \frac{1}{\sin 45^\circ} = \frac{1}{(1/\sqrt{2})} = \sqrt{2}$$

$$\mu = \frac{c}{v} \Rightarrow \frac{c}{\mu} = \frac{3\times10^8}{\sqrt{2}}\, m/s$$

6. **Sol.(2)**

When reflected and refracted rays are perpendicular, reflected light is polarised with electric field vector perpendicular to the plane of incidence.

tan i = μ, where i = Brewster's angle or polarisation angle



7. **Sol.(4)**

Here $\beta = \frac{\lambda D}{d}$ & $\beta' = \frac{\lambda D'}{d'}$

Where D' = 2D, $d' = \frac{d}{2}$

$$\Rightarrow \beta' = \frac{\lambda}{d/2} = \frac{4\lambda D}{d}$$

$$\Rightarrow \beta' = 4\beta$$

Fringe width becomes 4 times

8. **Sol.(1)**

In second case the incident frequency is halved

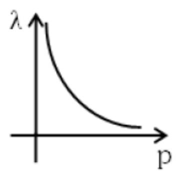
Incident frequency $= \frac{1.5}{2} v_0 = 0.75\, v_0$

Now the incident frequency is less than threshold frequency so no emission of electron take place therefore no current. (i = 0)

9. **Sol.(3)**

$$\lambda = \frac{h}{p}$$

Graph will be hyperbolic



10. **Sol.(3)**

Dimensional formula of self inductance

= $[ML^2T^{-2}A^{-2}]$

11. **Sol.(2)**

$$a = \frac{10^4}{2000\times10} = \frac{1}{2} m/s^2$$

$$T = (4ma) = 4\times2000\times\frac{1}{2}$$

= 4KN

12. **Sol. (4)**

13. **Sol.(3)**

$$\rho = \frac{m}{V} = \frac{m}{\ell^3}$$

$$\frac{d\rho}{\rho} = \frac{dm}{m} + \frac{3d\ell}{\ell}$$

% error in density = 2 + 3 × 1.5 = 6.5 %

14. **Sol.(2)**

$$ma = \frac{vdm}{dt}$$

200a = 2000 [0.2]

$$a = \frac{400}{200} = 2\, m/s^2$$

15. **Sol.(4)**

Velocities are interchanged

16. **Sol.(3)**

True value = observed value – zero error

observed value = main scale reading + (V.S. reading) × LC

observe value = 3 × 1 mm + 3(0.1) mm

= 3.3 mm

True value = 3.3 mm – 0.2 mm

= 3.1 mm

17. **Sol.(4)**

$$\frac{E_{H.S} = \frac{1}{2}.\frac{2}{3}MR^2.\omega^2}{E_{H.C} = \frac{1}{2}MR^2.(2\omega)^2} = 1:6$$

18. **Sol.(3)**

$W_s = mg_s = 72$ N

$$W_h = mg_h = \frac{mg_s}{\left(1+\frac{h}{R}\right)^2} = \frac{72N}{\left(1+\frac{R/2}{R}\right)^2} = \frac{72}{9/4}$$

$W_h = 32$ N

19. **Sol.(2)**

$$V_0 = \sqrt{\frac{GM}{R}}$$

20. **Sol.(2)**

$P \propto r^2 T^4$

$$\frac{P_1}{P_2} = \left(\frac{r_1}{r_2}\right)^2 \times \left(\frac{T_1}{T_2}\right)^4$$

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

P_2 = 100 watt

21. **Sol.(1)**

From first law of thermodynamics,

ΔQ = ΔU + ΔW or ΔQ = ΔU + pΔV

For an adiabatic expansion,

ΔQ = 0, ΔW = positive

∴ ΔU is negative.

Also, ΔU ∝ pΔV

∴ Internal energy ΔU or produced of pV will decreases in adiabatic expansion.

Also, in adiabatic expansion neither heat enters into nor goes out. Therefore, work is done at the cost of internal energy of gas.

Both Assertion and Reason are true but Reason is NOT the correct explanation of Assertion.

22. **Sol.(3)**

$$Q = m.S_{ice}.\ \Delta T_1 + mL + m.S_{water}.\ \Delta T_2$$

$$(2500) = 25 \times \frac{1}{2} \times (30) + 25 \times 80 + 25 \times 1 \times \Delta T_2$$

$$= 375 + 2000 + 25 \times \Delta T_2$$

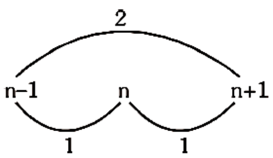
$$25\ \Delta T_2 = 125 \Rightarrow \ \Delta T_2 = 5°C$$

23. **Sol.(2)**

Number of beats $= \frac{508\pi}{2\pi} - \frac{500\pi}{2\pi} = 4$

And $\frac{I_{max}}{I_{min}} = \left(\frac{a_1 + a_2}{a_1 - a_2}\right)^2 = \left(\frac{3+6}{3-6}\right)^2 = \frac{9}{1}$

24. **Sol.(2)**



Now divide 1 second into 1, 1, 2 equal divisions

$(\frac{1}{1})$ $(\frac{1}{1})$ $(\frac{1}{2})$ $(\frac{2}{2})$

By eliminating common time instants, total maxima in one second is 2.

So, two beats per second will be heard.

25. **Sol.(1)**

$E - i r_1 = 0$

$$E - \left(\frac{E+E}{r_1 + r_2 + R}\right) r_1 = 0$$

$\Rightarrow r_1 = r_2 + R$

26. **Sol.(2)**

A & B are equipotential surfaces

∴ W = 0.

27. **Sol.(3)**

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

$$= \frac{100(14)}{800 - 100} = 2\Omega$$

28. **Sol.(2)**

29. **Sol.(2)**

$$e = -\frac{d\phi}{dt} = -(10t + 3)$$

|e| = 10 t + 3

$e_{t=8}$ = 80 + 3 = 83 V

30. **Sol.(1)**

$$\frac{C}{V} = \sqrt{\mu_r \varepsilon_r}$$

31. **Sol.(2)**

$$R = \frac{mv}{qB} = \frac{\sqrt{2mK}}{qB}$$

$\because R_\alpha = R_p$

$$\Rightarrow \frac{4m_p k_\alpha}{4e^2} = \frac{m_p (kp)}{e^2} = 4MeV$$

$\Rightarrow K_\alpha$ = 1MeV = 4 MeV

32. **Sol.(4)**

Magnetic susceptibility = χ

It is negative for diamagnetic materials only

33. **Sol.(3)**

$$P = \frac{nhc}{\lambda} \Rightarrow n = \frac{P\lambda}{hc}$$

$$n = \frac{3.3 \times 10^{-3} \times 600 \times 10^{-9}}{6.6 \times 10^{-34} \times 3 \times 10^{8}} = 10^{16}$$

34. **Sol.(1)**

$v_x = 5 - 4t$, $v_y = 3t$

$a_x = -4$, $a_y = 3$

$$\vec{a} = a_x \hat{i} + a_y \hat{j}$$

$$|\vec{a}| = 5 m/s^2$$

35. **Sol.(4)**

$$P = 70\% \, of \, \frac{mgh}{t}$$

$$= \frac{70}{100} \times 20 \times 10 \times 100$$

= 14 KW

36. **Sol.(1)**

$$I = \frac{MR^2}{2} - \frac{\left(\frac{M}{8}\right)\left(\frac{R}{2}\right)^2}{2}$$

$$= \frac{MR^2}{2} - \frac{MR^2}{32} = \frac{15}{32} MR^2$$

37. **Sol.(3)**

Rate of heat produced

$$\frac{dQ}{dt} = F_v \times v_T \quad \therefore v_T = \frac{2r^2}{9\eta}(\rho - \sigma) g \propto r^2$$

$$= 6\pi\eta r v_T \times v_T$$

$$\Rightarrow \frac{dQ}{dt} \propto r v_T^2 \propto r^5$$

38. **Sol.(1)**

$$Y = \frac{F\ell}{A\Delta\ell} \qquad \therefore V = Al \quad so \, \ell = \frac{V}{A}$$

$$F = \frac{YA\Delta\ell}{\ell} = \frac{YA^2\Delta\ell}{V} \propto A^2$$

$$\frac{F_1}{F_2} = \left(\frac{A_1}{A_2}\right)^2 \Rightarrow \frac{F}{F_2} = \left(\frac{A}{3A}\right)^2 = \frac{1}{9} \Rightarrow F_2$$

$$= 9F$$

39. **Sol.(3)**

x = a sin ωt or use $v = \omega\sqrt{A^2 - x^2}$

$$\frac{3a}{5} = a \sin \omega t$$

$\therefore$ sin ωt $\frac{3}{5} \Rightarrow \cos \omega t = \frac{4}{5}$

v = aω cos ωt $= a \times \frac{2\pi}{T} \times \frac{4}{5} = \frac{8\pi a}{5T}$

40. **Sol.(2)**

$$U = \frac{f}{2} nRT$$

$$U_{Total} = \frac{5}{2} \times 4 \times RT + \frac{3}{2} \times 2 \times RT$$

$$= 13\, RT$$

41. **Sol.(2)**

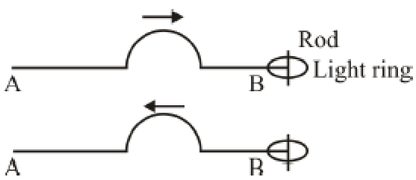
Rate of loss of heat = σeA ($T^4 - T_0^4$)

= 6 × 10^{-8} × (0.5) × (10 × 10^{-4}) [$(600)^4 - (400)^4$]

= 3.12 W

42. **Sol.(4)**

Consider the free and attached to a light ring. When a crest produced at A, reached B end, the ring rises above its equilibrium position. As the ring moves up, it stretches the string and produces a reflected crest, which travel towards A. there is no phase difference as crest is reflected as a crest.



This happens as , there is no boundary to oppose the motion of pulse.

43. **Sol.(2)**

$$P_{in} = P_{out}$$

$$\Rightarrow e_p I_p = e_s I_s \Rightarrow 220 \times i_p = \frac{4}{10}$$

44. **Sol.(2)**

$$I_{rms} = \frac{V_{rms}}{Z} = \frac{200}{50} = 4A$$

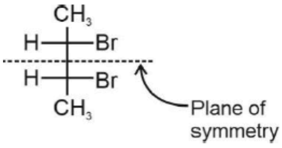
45. **Sol.(3)**

$S = \frac{v^2}{2a} = \frac{v^2}{2\mu g}$ [Stopping distance]

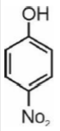
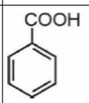
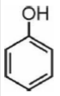
CHEMISTRY:

46. **Sol.(3)**

The compound which contains plane of symmetry is optically inactive.

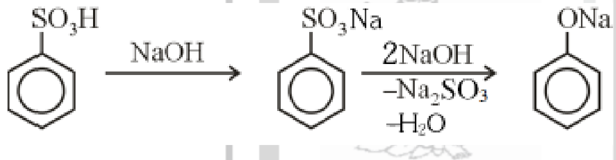


47. **Sol.(2)**

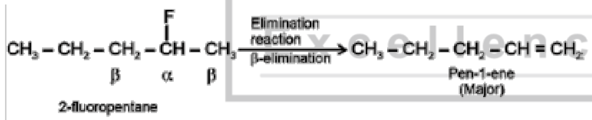
	Compounds		pKa
a.		(i)	7.1
b.		(ii)	4.2
c.		(iii)	10.0

Lower is the value of pK_a stronger is the acid.

48. **Sol.(2)**



49. **Sol. (2)**



Less substituted alkene is obtained which is given by Hofmann rule.

50. **Sol.(3)**

Tertiary alcohol immediately gives cloudiness with leucas reagent.

51. **Sol.(2)**

52. **Sol.(1)**

53. **Sol.(1)**

54. **Sol.(3)**

$$\overset{\alpha}{C}H_3CHO + NaOH \rightarrow CH_3 - \underset{}{\overset{OH}{\overset{|}{C}}}H - CH_2 - CHO$$

55. **Sol.(3)**

56. **Sol.(4)**

57. **Sol.(3)**

58. **Sol.(3)**

59. **Sol.(1)**

60. **Sol.(1)**

61. **Sol.(1)**

62. **Sol.(2)**

PH_3 has least MP & BP due to no H bond wrt NH_3 & Less molar weight wrt least 15^{th} group hydrides.

63. **Sol.(4)**

64. **Sol.(4)**

$$Ni^{+2} + 2\,dmg \xrightarrow{OH^-} [Ni(dmg)_2]$$

65. **Sol.(2)**

$$\frac{d[SO_3]}{dt} = \frac{40}{80}\text{ mol min}^{-1} = \frac{1}{2}\text{ mol min}^{-1}$$

$$\frac{-d[O_2]}{dt} = \frac{1}{2} \times \frac{d[SO_3]}{dt} = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}\text{ mol min}^{-1}$$

$$= 8\text{ g min}^{-1}$$

66. **Sol.(1)**

$r \propto [C]^1$ [For first order reaction]

$$\frac{r_1}{r_2} = \frac{C_1}{C_2} = \frac{3 \times 10^{-4}}{2 \times 10^{-4}} = \frac{3}{2}$$

$$k = \frac{2.303}{t_{75} - t_{25}} \log \frac{C_1}{C_2}$$

$$k = 0.008290\text{ min}^{-1}$$

$$t_{1/2} = \frac{0.693}{k} = \frac{0.693}{0.008290}$$

$$= 83.33\text{ min}$$

67. **Sol.(1)**

$$P_A^o\left(\frac{1}{1+3}\right) + P_B^o\left(\frac{3}{1+3}\right) = 550$$

$$\Rightarrow 0.25\,P_A^o + 0.75\,P_B^o = 550\text{ mm Hg} \quad ....(1)$$

On adding 1 mole B

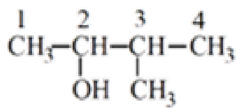
$$P_A^o\left(\frac{1}{1+4}\right) + P_B^o\left(\frac{4}{1+4}\right) = 560$$

$$\Rightarrow 0.20\,P_A^o + 0.8\,P_B^o = 560\text{ mm Hg} \quad ....(2)$$

On solving eq^n (1) and eq^n (2)

$P_A^o = 400$ mm Hg $P_B^o = 600$ mm Hg

68. **Sol.(3)**



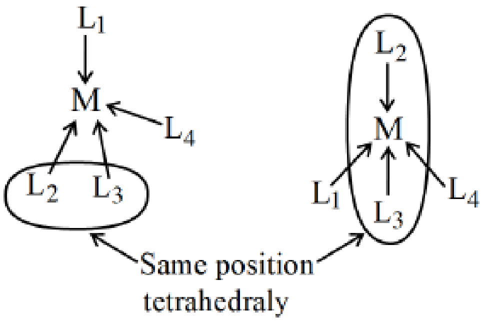
⟶ 3-Methyl-2-butanol

69. **Sol.(2)**

70. **Sol.(4)**

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

71. **Sol.(4)**



72. **Sol.(2)**

73. **Sol.(4)**

74. **Sol.(4)**

75. **Sol.(3)**

76. **Sol.(4)**

77. **Sol.(1)**

78. **Sol.(3)**

79. **Sol.(4)**

80. **Sol.(1)**

$$\%C\ell = \frac{35.5}{143.5} \times \frac{W_{AgCl}}{W_{org.comp}} \times 100$$

$$= \frac{35.5}{143.5} \times \frac{0.5740}{0.3780} \times 100 = 37.57\%$$

81. **Sol.(3)**

82. **Sol.(3)**

83. **Sol.(1)**

Fact for vanadium, Zn has fulfilled confi.

84. **Sol.(4)**

85. **Sol.(1)**

86. **Sol.(2)**

$\pi = icRT$

$$i = \frac{0.369}{0.01 \times 0.082 \times 300} = 1.5$$

87. **Sol.(2)**

$Fe + 2Fe^{3+} \longrightarrow Fe^{2+} + 2Fe^{2+}$

$n = 2$

$\Delta G^\circ = -\, nFE^\circ_{cell}$

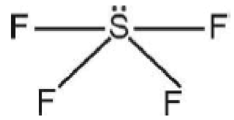
$= -2 \times 96500 \times 1.2$

$= -\, 231600$ J

$= -231.6$ kJ

88. **Sol.(1)**

89. **Sol.(3)**



See-saw structure, $\mu \neq 0$

Two diffeenet S – F bond lenghts.

90. **Sol.(2)**