FT - 10 (FR) (NEET - CBSE, GSEB) (12 - 06 - 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	3	4	3	2	1	4	2	1	4	3	3	4	1	2	3	4	1	4	2	2
Q	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans	3	1	1	3	2	1	2	2	2	3	2	4	1	2	4	3	1	4	4	3
Q	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans	1	3	3	2	3	4	4	3	2	3	4	4	3	1	4	4	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
Ans	4	2	4	3	4	3	1	1	3	4	4	4	1	3	1	2	2	1	2	2
Q	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Ans	1	3	2	4	2	4	4	2	2	2	3	4	4	1	2	3	3	3	1	3
Q	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Ans	2	3	2	3	2	3	3	4	3	1	4	2	1	1	2	1	1	2	3	3
Q	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Ans	1	3	4	2	1	1	2	1	1	2	1	4	4	4	3	3	2	2	3	2
Q	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Ans	2	2	4	2	3	2	4	3	2	4	4	3	4	1	4	3	2	1	3	1
Q	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Ans	3	2	2	4	1	4	1	3	1	4	3	3	2	4	3	1	2	2	4	4

PHYSICS:

1. Sol. (3)

$v = \omega\sqrt{A^2 - x^2}$

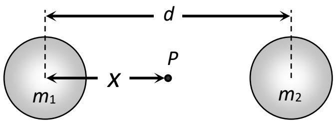
$v = \sqrt{\dfrac{k}{m}}\sqrt{A^2 - x^2}$

$v = 5\sqrt{A^2 - x^2} = 40 \times 10^{-2}$

$\dfrac{40^2}{5^2} \times 10^{-4} = (0.50)^2 - x^2$

$x = 0.49$ m

2. Sol. (4)



Force will be zero at the point of zero intensity

$$x = \frac{\sqrt{m_1}}{\sqrt{m_1} + \sqrt{m_2}} d = \frac{\sqrt{81M}}{\sqrt{81M} + \sqrt{M}} D = \frac{9}{10} D.$$

3. Sol. (3)

Factual

4. Sol. (2)

$r_2 = 0$

$r_1 = A - r_2 \Rightarrow r_1 = A$

$1 \times \sin(2A) = \mu \sin(A)$

$\mu = 2\cos(A)$

5. Sol. (1)

Using the relation

$c = \frac{E_0}{B_0}$

$B_0 = \frac{E_0}{c}$

$= \dfrac{9.3}{3 \times 10^8} = 3.1 \times 10^{-8} T$

6. Sol. (4)

$a = \mu g = 2 \text{m/s}^2$

$v = u + at$

$4 = 2 \times t \Rightarrow t = 2\text{s}$

$s = \dfrac{1}{2}at^2 = \dfrac{1}{2} \times 2 \times 2^2 = 4$ m

7. **Sol. (2)**

In the depletion region, there are positive ions on the n-side and negative ions on the p-side. So the n-side has higher potential

8. **Sol. (1)**

The translational $KE = \frac{1}{2}kx^2$

$$\frac{1}{2}mv^2 = \frac{1}{2}kx^2$$

$$x = \sqrt{\frac{m}{k}}v$$

9. **Sol. (4)**

$$C = \frac{\varepsilon_0 Ak_2}{2d_1}$$

$$q = CE$$

$$q = \frac{\varepsilon_0 Ak_2 E}{2d_1}$$

10. **Sol. (3)**

$$\frac{\Delta S}{S} = \frac{\Delta d}{d} + \frac{\Delta \ell}{\ell}$$

11. **Sol. (3)**

$$\frac{F}{m+M} = \mu g$$

$$F = (m+M)\mu g$$

12. **Sol. (4)**

$$\frac{1}{2}mv^2 = mgh - FL$$

$$\frac{1}{2}mv^2 = mgh - \sqrt{2}hF$$

$$v = \sqrt{2gh - \frac{2\sqrt{2}Fh}{m}}$$

13. **Sol. (1)**

$$\frac{mv^2}{r} = \frac{k}{r^2}$$

$$\frac{1}{2}mv^2 = \frac{1}{2}\frac{k}{r}$$

14. **Sol. (2)**

At equilibrium $\frac{\partial U}{\partial x} = 0$

$$\Rightarrow \frac{12a}{x^{13}} = \frac{6b}{x^7}$$

$$x^6 = \frac{2a}{b}$$

15. **Sol. (3)**

Speed of block after collision = $\sqrt{2g \times 0.2}$ = 2m/s

Conservation of momentum

$\Rightarrow$ 0.01 × 800 = 2 × 2 + 0.01 v

v = 400 m/s

16. **Sol. (4)**

For photoelectric emission.

$\nu > \nu_0$

Or $h\nu > \phi$

17. **Sol. (1)**

COM = Centroid

18. **Sol. (4)**

$$\frac{\int_0^3 (2+x^2)x\,dx}{\int_0^3 (2+x^2)dx}$$

19. **Sol. (2)**

Work done does not depend on time.

20. **Sol. (2)**

The power delivered by the torque τ exerted on rotating body is given by

P = $\tau\omega$ or $\tau = \frac{P}{\omega}$

Here P = 100 kW = 100, 000 Watt

$\omega = \left(\frac{1800}{60}\right) \times 2\pi$

= 60 π rad/sec,

$\tau = \frac{10^5}{60 \times 3.14}$ = 531 N.m

21. **Sol. (3)**

$$U_i = -\frac{GMm}{R}$$

$$U_f = -\frac{GMm}{2R}$$

$$\Delta U = \frac{GMm}{2R}$$

$$= \frac{gmR}{2}$$

22. **Sol. (1)**

$$T^2 \propto r^3$$

$$\left(\frac{r_1}{r_2}\right)^{1/2} = \frac{1}{2}$$

$$r_2 = 4 \times 10^4 \text{ km}$$

23. **Sol. (1)**

Density of water is maximum at 4°C and is less on either side of this temperature.

24. **Sol. (3)**

$$\frac{1}{r} = \frac{1}{r_1} - \frac{1}{r_2}$$

$$\frac{1}{r} = \frac{1}{6} - \frac{1}{8}$$

$$r = \frac{8 \times 6}{2} = 24 \text{ cm}$$

25. **Sol. (2)**

$$\Delta U = nC_v \Delta T$$

$$Q = W + \Delta U$$

$$\Rightarrow \quad \Delta U = -15\,R$$

$$\Rightarrow \; -15\,R = \left(\frac{R}{\gamma - 1}\right)\Delta T$$

$$-15\,R = \frac{3}{2} R\Delta T$$

$$\Delta T = -10$$

$$T_F = T - 10$$

26. **Sol. (1)**

$W = W_{AB} + W_{AC}$

$= P_0(2V_0 - V_0) + 0$

$= P_0V_0$

$P_0V_0 = RT_0$

$W = RT_0$

27. **Sol. (2)**

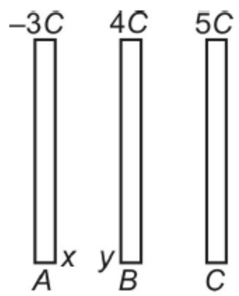
$$\frac{60}{100} = 1 - \frac{300}{T}$$

$$\frac{300}{T} = \frac{40}{100}$$

$T = 750\ K$

$T = 477°C$

28. **Sol. (2)**



Change on outer surface of *A* and C

$$= \frac{-3C + 4C + 5C}{2}$$

$= 3C$

$x + 3 = -3C$

$x = -6C$

$y = -x$

$= 6C$

29. **Sol. (2)**

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

Let density be *d*

$$\therefore \quad \frac{m}{A\ell} = d$$

$$A = \frac{m}{\ell d}$$

$$\Rightarrow \quad R \propto \frac{\ell^2}{m}$$

Ratio $= \frac{1}{5} : \frac{16}{3} : \frac{64}{1}$

$= 3 : 80 : 960$

30. **Sol. (3)**

$$\frac{12}{24} \times 8 = E$$

$E = 4$ V

31. **Sol. (2)**

No current flows via capacitor

$$V_c = V_{r_2}$$

$$V_c = \frac{Er_2}{r + r_2}$$

$$\frac{q}{C} = V_C$$

$$q = \frac{CEr_2}{r + r_2}$$

32. **Sol. (4)**

$e = (15 - 3) \times 6 = 72$ V

$r = 18 \times 2 = 36\ \Omega$

33. **Sol. (1)**

$$M = I\pi R^2$$

$$2\pi R = 4a$$

$$a = \frac{\pi}{2} R$$

$$M' = I\left(\frac{\pi R}{2}\right)^2$$

$$= \frac{\pi}{4} \pi R^2 I = \frac{\pi M}{4}$$

34. **Sol. (2)**

$U_i = -MB\cos 0°$

$= -MB$

$U_f = -MB\cos 180°$

$= MB$

$W = U_f - U_i$

$= 2MB$

35. **Sol. (4)**

$M = \sqrt{L_1 L_2}$

$= \sqrt{4 \times 9} = 6$ mH

36. **Sol. (3)**

$I = \dfrac{V}{\sqrt{R^2 + X_C^2}}$

$\dfrac{I}{3} = \dfrac{V}{\sqrt{R^2 + 9X_C^2}}$

$\sqrt{R^2 + 9X_C^2} = 3\sqrt{R^2 + X_C^2}$

$R^2 + 9X_C^2 = 9R^2 + 9X_C^2$

$\Rightarrow \quad R = 0$

$\Rightarrow$ Power factor = 0

37. **Sol. (1)**

$$V_{rms} = \sqrt{\frac{\int_0^{T/2} V^2 dT}{\int_0^{T/2} dT}}$$

38. **Sol. (4)**

All inductors are parallel.

39. **Sol. (4)**

Factual

40. **Sol. (3)**

α-particle cannot be attracted to nucleus.

41. **Sol. (1)**

By using $m = \dfrac{f}{f+u}$

here $-m = \dfrac{(+f)}{(+f)(+u)}$

$\Rightarrow \quad -\dfrac{1}{m} = \dfrac{f+u}{f} = 1 + \dfrac{u}{f} \quad \Rightarrow u = -\left(\dfrac{m+1}{m}\right).f$

42. **Sol. (3)**

$16\mu_A = 10\mu_B$

$\dfrac{\mu_A}{\mu_B} = \dfrac{10}{16}$

$= 0.625$

43. **Sol. (3)**

$\sin i_C = \dfrac{1}{\mu}$

$\mu = \dfrac{5}{3}$

44. **Sol.(2)**

Distance between n^{th} Bright fringe and m^{th} dark fringe $(n > m)$

$\Delta x = \left(n - m + \dfrac{1}{2}\right)\beta = \left(5 - 3 + \dfrac{1}{2}\right) \times \dfrac{6.5 \times 10^{-7} \times 1}{1 \times 10^{-3}}$

$= 1.63\ mm$

45. **Sol. (3)**

Factual

CHEMISTRY:

46 **Sol.(4)**

$$K_P = K_C(RT)^{\Delta ng}$$
$$100 = K_C(0.083 \times 1000)^{-1}$$
$$K_C = 8.3 \times 10^3$$

47. **Sol.(4)**

48. **Sol.(3)**

$$s = \sqrt{K_{sp}} = 10^{-5}M$$
$$\downarrow \times \text{mol. mass } (143.5)$$
$$= 143.5 \times 10^{-5} \text{ g/L}$$
$$= 1.435 \times 10^{-3} \text{ g/L}$$
$$1.435 \times 10^{-3} \text{ g AgCl} \longrightarrow 1 \text{ L water}$$
$$1.435 \text{ g} \longrightarrow \frac{1}{10^{-3}} = 10^3\text{L} = 10^6\text{cm}^3$$

49. **Sol.(2)**

50. **Sol.(3)**

$$\Delta G^\circ = \Delta H^\circ - T\Delta S^\circ$$
$$= 66.2 - \frac{400 \times (-132.4)}{1000}$$
$$\Delta G^\circ = +ve$$

$\Delta G^\circ > 0$, reaction is nonspontaneous so it will not take place under given condition.

51. **Sol.(4)**

d_{xy} have electron density in xy plane and

d_{yz} have electron density in yz plane.

52. **Sol.(4)**

$$\lambda = \frac{h}{mv}$$
$$(mv)_e = (mv)_p$$
$$\frac{v_e}{v_p} = \frac{m_p}{m_e} = \frac{1.67 \times 10^{-27}}{9.1 \times 10^{-31}}$$

= 1835 approx

53. **Sol.(3)**

54. **Sol.(1)**

55. **Sol.(4)**

56. **Sol.(4)**

57. **Sol.(4)**

$$\text{Cell reaction : } Cd(s) + Cu^{+2} \longrightarrow Cd^{+2} + Cu(s)$$
$$E_{cell} = E^\circ_{cell} - \frac{0.0591}{2}\log\frac{[Cd^{+2}]}{[Cu^{+2}]}$$
$$[Cd^{+2}]\downarrow \text{ and } [Cu^{+2}]\uparrow \Rightarrow E_{cell}\uparrow$$

58. **Sol.(1)**

$$\kappa = \frac{1}{R} \times G^* = \frac{1}{55} \times 0.66$$
$$\kappa = 0.012\Omega^{-1}\text{ cm}^{-1}$$

59. **Sol.(2)**

60. **Sol.(3)**

$$CH_3-CH_2-\overset{\overset{O}{\parallel}}{C}-H \xrightarrow{HCN} CH_3-CH_2-\overset{\overset{OH}{|}}{CH}-CN$$
$$\xrightarrow{H_3O^+} CH_3-CH_2-\underset{\underset{OH}{|}}{CH}-COOH$$

61. **Sol.(4)**

$$(CH_3)_2C{=}CH_2 \xrightarrow{KMnO_4/H^{\oplus}} (CH_3)_2C{=}O + CO_2$$

(Ketone)

62. **Sol.(2)**

63. **Sol.(4)**

$$2R-X + 2Na \xrightarrow[\text{Wurtz reaction}]{\text{Dry ether}} R-R + 2NaX$$
$$2Ph-X + 2Na \xrightarrow[\text{Fittig reaction}]{\text{Dry ether}} Ph-Ph + 2NaX$$

64. **Sol.(3)**

65. **Sol.(4)**

66. **Sol.(3)**

67. **Sol.(1)**

68. **Sol.(1)**

$[Co(EDTA)]^{-1}$

$x - 4 = -1, x = +3$

EDTA = octahedral complex

C.N. = 6

= 6 + 3 = 9

69. **Sol.(3)**

70. **Sol.(4)**

71. **Sol.(4)**

72. **Sol.(4)**

In acidic medium valence factor of $KMnO_4 = 5$

($\because MnO_4^- \rightarrow Mn^{2+}$) and $X^{n+} \rightarrow XO_3^-$ thus

valence factor of $X^{n+} = 5 - n$

Now, from the law of equivalence,

eq.($KMnO_4$) = eq. (X^{n+})

$\Rightarrow$ moles × valence factor = moles × valence factor

$\Rightarrow 6 \times 10^{-3} \times 5 = 9 \times 10^{-3} \times (5-n)$

$$\Rightarrow \frac{30}{9} = (5-n)$$
$$\Rightarrow n = 5 - \frac{30}{9} = \frac{15}{9} = \frac{5}{3}$$

73. **Sol.(1)**

74. **Sol.(3)**

75. **Sol.(1)**

Case-I

$NaOH + NH_4Cl \longrightarrow NaCl + NH_4OH$

1 mol 1 mol 0 0

0 0 1 mol 1 mol

(Neutral)

$[OH^-]_{NH_4OH} = \sqrt{K_b \times C}$

$(pOH)_1 = \frac{1}{2}pK_b \left(C = \frac{1\ mol}{1L} = 1\right)$

Case II

$NH_4OH + NH_4Cl \Rightarrow$ Basic Buffer

1 mol 1 mol

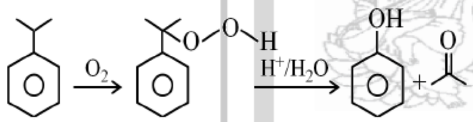
$(pOH)_{II} = pK_b + \log\frac{[NH_4Cl] = 1}{[NH_4OH] = 1} = pK_b$

$\therefore \frac{(pOH)_I}{(pOH)_{II}} = \frac{1/2\ pK_b}{pK_b} = \frac{1}{2}$

76. **Sol.(2)**

for hydrides, down a group, acidic character and reducing property increase.

77. **Sol.(2)**



78. **Sol.(1)**

79. **Sol.(2)**

80. **Sol.(2)**

81. **Sol.(1)**

(i) $Cl_2 \underset{k_2}{\overset{k_1}{\rightleftharpoons}} 2Cl$

(ii) $Cl + CO \underset{k_4}{\overset{k_3}{\rightleftharpoons}} COCl$

(iii) $COCl + Cl_2 \xrightarrow{k_5} COCl_2 + Cl$ (slow)

from (iii) $r = k_5 [COCl] [Cl_2]$ ... (1)

from (ii) $\frac{k_3}{k_4} = \frac{[COCl]}{[Cl][CO]}$ ... (2)

from (i) $\frac{k_1}{k_2} = \frac{[Cl]^2}{Cl_2}$ ... (3)

from eq. (1), (2) & (3)

$r = k_5 \times \frac{k_3}{k_4} \times \left(\frac{K_1}{K_2}\right)^{1/2} [CO][Cl_2]^{3/2}$

82. **Sol.(3)**

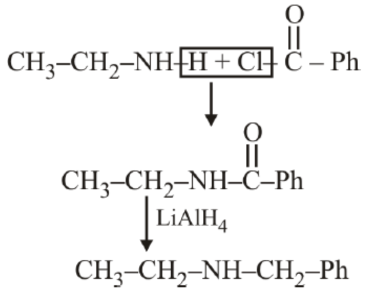
83. **Sol.(2)**

84. **Sol.(4)**

85. **Sol.(2)**

86. **Sol.(4)**

87. **Sol.(4)**



88. **Sol.(2)**

Cl_2 → Greenish yellow

NO_2 → Brown gas

CdS → Yellow

$Cu_2 [Fe(CN)_6]$ → Chocolate brown

89. **Sol.(2)**

90. **Sol.(2)**