FT - 17 (FR) (NEET - CBSE, GSEB) (14 - 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	2	2	2	3	1	4	2	3	4	4	2	3	1	1	1	4	3	3	2	1
Q	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans	3	3	4	2	2	2	4	1	2	2	2	1	4	2	4	3	1	2	1	3
Q	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans	1	2	1	4	2	3	1	2	3	3	3	2	2	3	4	2	2	2	1	1
Q	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
1	4	4	1	4	2	2	1	2	3	2	1	2	2	1	3	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	3	1	2	2	1	3	4	2	2	3	1	1	1	3	3	3	4	1	1	4
Q	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Ans	2	4	2	4	3	4	4	3	3	2	2	3	2	4	4	1	4	3	4	4
Q	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Ans	4	3	2	4	4	3	2	2	2	2	3	4	2	2	1	1	3	2	1	3
Q	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Ans	4	4	4	3	4	4	4	3	1	1	2	4	4	1	3	1	1	2	4	4
Q	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Ans	2	1	2	4	3	4	3	4	4	3	2	2	2	4	2	4	2	3	3	4

PHYSICS:

1. Sol.(2)

Its a balanced

wheat stone bridge.

$$i = \frac{V}{4+2} = \frac{V}{6}$$

2. Sol.(2)

At half power frequency

$$\text{Power} = \frac{P_{max}}{2} = \frac{1}{2} \times \frac{(200/\sqrt{2})^2}{40}$$

$$= 250 \text{ watt}$$

3. Sol.(2)

4. Sol.(3)

Balanced wheat stone bridge

5. Sol.(1)

$$R = \frac{P}{i^2} = \frac{2}{10 \times 10} = 0.02\Omega$$

6. Sol.(4)

$$e = \frac{-\Delta\phi}{\Delta t}$$

$$\Rightarrow \left(e = \frac{-\phi_i}{t}\right) = \frac{\phi_i}{t}$$

$$= e = 800 \times 5 \times 10^{-5} \times \frac{0.05}{1}$$

$$= 0.002\text{V}$$

7. Sol.(2)

First excited state ⇒ n = 2

$$T_2 = -13.6\frac{z^2}{n^2}$$

$$= -\frac{13.6}{4}eV$$

Second excited state ⇒ n = 3

$$T_1 = -13.6\frac{z^2}{n^2}$$

$$= -\frac{13.6}{9} eV$$

$$T_1 : T_2 = \frac{1}{9} : \frac{1}{4} = 4 : 9$$

8. Sol.(3)

$$\phi = 0$$

because $\vec{E} \perp \vec{A}$

9. Sol.(4)

Heat loss = Heat gain

$$\left(\frac{m}{2}\right)(X)\left(2T - \frac{3T}{2}\right) = (m)(c)\left(\frac{3T}{2} - T\right)$$

then X = 2C

10. Sol.(4)

$$I = \frac{E}{At} \Rightarrow E = IAt = \frac{20}{10^{-4}} \times 20 \times 10^{-4} \times 60$$

$$= 24 \times 10^3 \text{ J}$$

11. Sol.(2)

$$x = A \sin \omega t$$

$$\frac{\sqrt{3}}{2} A = A \sin \omega t$$

$$\therefore \sin \omega t = \frac{\sqrt{3}}{2} \Rightarrow \omega t = \frac{\pi}{3}$$

$$\left(\frac{2\pi}{T}\right) t = \frac{\pi}{3} \Rightarrow t = \frac{T}{6}$$

12. Sol.(3)

13. Sol.(1)

At any temperature

$$(\Delta \ell)_{Cu} = (\Delta \ell)_{Al}$$

$$\alpha_1 \ell_1 \Delta T = \alpha_2 \ell_2 \Delta T$$

$$(1.7 \times 10^{-5}) \times 66 = (2.2 \times 10^{-5}) \times \ell_2$$

$$\ell_2 = 51 \text{ cm}$$

14. Sol.(1)

Heat supplied = $Ms\Delta T \propto m$

and $M = \rho\left(\frac{4}{3}\pi r^3\right) \propto r^3$

$$\therefore \frac{Q_1}{Q_2} = \left(\frac{r_1}{r_2}\right)^3 = \left(\frac{2.5}{1}\right)^3 = \frac{125}{8}$$

15. Sol. (1)

Initial and final states are same in all the process.

Hence $\Delta U = 0$; in each case.

By FLOT; $\Delta Q = \Delta W$ = Area enclosed by curve with volume axis.

$\because$ (Area)1 < (Area)2 < (Area)1 $\Rightarrow Q_1 < Q_2 < Q_3$

16. Sol.(4)

Balanced wheat stone bridge

17. Sol.(3)

$$\frac{1}{2} I\left[\left(\frac{120 \times 2\pi}{60}\right)^2 - \left(\frac{60 \times 2\pi}{60}\right)^2\right] = 128$$

$$\Rightarrow \frac{1}{2} I\left[(4\pi)^2 - (2\pi)^2\right] = 128$$

$$\Rightarrow \frac{1}{2} I(12\pi^2) = 128$$

$$\Rightarrow I = \frac{256}{120} = \frac{32}{15} \text{ kg-m}^2$$

18. Sol.(3)

When angle of contact ≥ 90° then liquid doesn't wet solid.

19. Sol.(2)

$$76 \text{ cm} \times \rho_{Hg} \times g = h \times \rho_L \times g$$

$$h = 76 \text{ cm} \times \frac{\rho_{Hg}}{\rho_L}$$

$$= 76 \text{ cm} \times \frac{13600}{760} = 13.6 \text{ m}$$

20. Sol.(1)

Kepler's Third Law :-

$T \propto r^{3/2}$

$$\frac{T_2}{T_1} = \left(\frac{r_2}{r_1}\right)^{3/2}$$

$$= \left(\frac{R + 2.5R}{R + 6R}\right)^{3/2}$$

$$= \frac{1}{2\sqrt{2}}$$

$$\Rightarrow T_2 = \frac{24}{2\sqrt{2}} = 6\sqrt{2} \text{ hours}$$

21. Sol.(3)

$$AB \sin\theta = \frac{AB \cos\theta}{\sqrt{3}}$$

$$\tan\theta = \frac{1}{\sqrt{3}}$$

$\Theta = 30°$

$$\left|\vec{A} - \vec{B}\right| = \sqrt{A^2 + B^2 - 2AB\cos 30°}$$

$$= (A^2 + B^2 - \sqrt{3}AB)$$

22. Sol.(3)

V = IR

$$R = \frac{V}{I}$$

$$\left(\frac{\Delta R}{R}\right) \times 100$$

$$= \left(\frac{\Delta V}{V}\right) \times 100 + \left(\frac{\Delta I}{I}\right) \times 100$$

= 2 + 2 = 4%

23. **Sol.(4)**

Dipole moment = Charge × distance = [LTA]

Electric flux = electric field × Area

= $[ML^3 T^{-3} A^{-1}]$

Electric field = $[ML^1 T^{-3} A^{-1}]$

24. **Sol.(2)**

$$S = \frac{V^2}{2a} = \frac{V^2}{2\mu g}$$

$$= \frac{4 \times 4}{2 \times 0.5 \times 10}$$

$$= \frac{16}{10} = 1.6\,m$$

25. **Sol.(2)**

26. **Sol.(2)**

$i = 45°;\ A = 60°$

$$\delta_m = 2i - A = 30°$$

$$\mu = \frac{\sin\left(\frac{A + \delta_m}{2}\right)}{\sin A/2}$$

$$= \frac{\sin 45°}{\sin 30°} = \frac{1}{\sqrt{2}} \cdot \frac{2}{1} = \sqrt{2}$$

27. **Sol.(4)**

We know $C = \sin^{-1}\left(\frac{1}{\mu}\right)$

Given critical angle $i_B > i_A$

So $\mu_B < \mu_A$ i .e., B is rarer and A is denser.

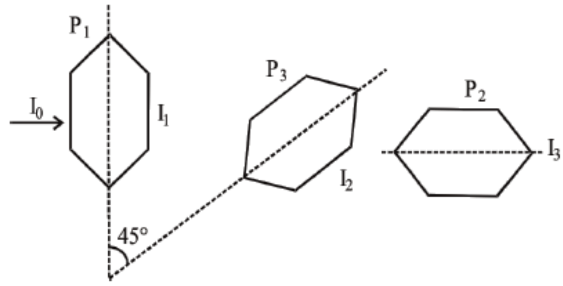
Hence light can be totally internally reflected when it passes from A to B

Now critical angle for A to B

$$C_{AB} = \sin^{-1}\left(\frac{1}{{}_B\mu_A}\right) = \sin^{-1}[{}_A\mu_B]$$

$$= \sin^{-1}\left[\frac{\mu_B}{\mu_A}\right] = \sin^{-1}\left[\frac{\sin i_A}{\sin i_B}\right]$$

28. **Sol.(1)**



$$I_1 = \frac{I_0}{2}$$

$$I_2 = \frac{I_0}{2}\cos^2 45° = \frac{I_0}{4}$$

29. **Sol.(2)**

Let work function of metal surface be ϕ

When incident wavelength is λ

$(K.E._{max})_1 = E - \phi$ …….(1)

When incident wavelength is $\frac{\lambda}{4}$

$(K.E._{max})_2 = 4E - \phi$ ……..(2)

from (1) & (2)

$$\frac{(K.E._{max})_2}{(K.E._{max})_1} = \frac{4E - \phi}{E - \phi}$$

$$\frac{4E - \phi - 3\phi + 3\phi}{E - \phi}$$

$$\frac{(K.E._{max})_2}{(K.E._{max})_1} = \frac{4E - \phi}{E - \phi}$$

$$= \frac{4E - \phi - 3\phi + 3\phi}{E - \phi}$$

$$= 4 + \frac{3\phi}{E - \phi} > 4$$

30. **Sol.(2)**

Q = 1000 q

R = 10 r

$$V = \frac{kQ}{R} = 100\left(\frac{kq}{r}\right)$$

= 100 (0.1) = 10 V

31. **Sol.(2)**

∵ Wavelength of blue, indigo and violet light is less than green light.

∴ Energy of blue, indigo and violet light is more than green light.

Hence, violet light is capable of ejecting of photoelectron.

32. **Sol.(1)**

We know $(n_i)^2 = n_e \times n_h$

$(1.5 \times 10^{16})^2 = n_e \times (4.5 \times 10^{22})$

$n_e = 5 \times 10^9 \text{ m}^{-3}$

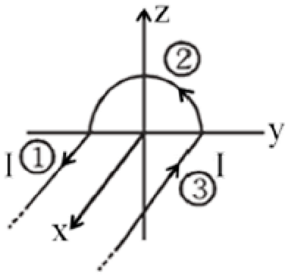
33. **Sol.(4)**

34. **Sol.(2)**

35. **Sol.(4)**

'B' due to segment '1'

$$B_1 = \frac{\mu_0 I}{4\pi R}(+\hat{k}) = B_3$$



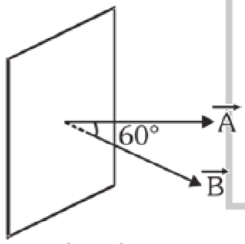
B due to segment '2'

$$B_2 = \frac{\mu_0 I}{4R}(+\hat{i})$$

$$so\ 'B'\ at\ center\ \vec{B}_C = \vec{B}_1 + \vec{B}_2 + \vec{B}_3$$

$$\Rightarrow \vec{B}_C = \frac{+\mu_0 I}{4R}\left(\hat{i} + \frac{2\hat{k}}{\pi}\right) = \frac{+\mu_0 I}{4\pi R}(\pi\hat{i} + 2\hat{k})$$

36. **Sol.(3)**



$$\vec{\tau} = \vec{M} \times \vec{B}$$

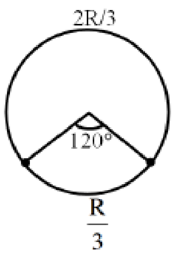
$$|\vec{\tau}| = MB\sin\theta$$

= NIAB sin θ = 0.20 Nm

37. **Sol.(1)**

$$\sum \frac{\frac{E_1}{r_1} + \frac{E_2}{r_2}}{\frac{1}{r_1} + \frac{1}{r_2}} = \frac{\frac{9}{1} + \frac{18}{2}}{\frac{1}{1} + \frac{1}{2}} = 12V$$

38. **Sol.(2)**



$$R_{eq} = \left(\frac{1}{R/3} + \frac{1}{2R/3}\right)^{-1} = \frac{2R}{9}$$

39. **Sol.(1)**

For using the internal energy of sea water to operate the engine of a ship, the internal energy of the sea water has to be converted into mechanical energy. Since, whole of the internal energy cannot be converted in to mechanical energy a part has to be rejected to a colder body (sink). Since, no such body is available, the internal energy of the sea water cannot be therefore, used to operate the engine of the ship.

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

40. **Sol.(3)**

$$\frac{n_1}{n_2} = \frac{\frac{v_1}{4\ell}}{\frac{v_2}{4\ell}} \quad (v \propto \sqrt{T})$$

$$\frac{200}{n_2} = \frac{v_1}{v_2} = \sqrt{\frac{T_1}{T_2}} = \sqrt{\frac{400}{573}}$$

$$n_2 = 10 \times \sqrt{573}$$

$$\simeq 240\text{Hz}$$

41. **Sol.(1)**

$$V_1 = \frac{m - 3m}{m + 3m}u = -\frac{u}{2}$$

Required fraction

$$= 1 - \left(\frac{V_1}{u}\right)^2$$

$$= 1 - \frac{1}{4} = \frac{3}{4}$$

42. **Sol.(2)**

$$S_{n-1} = \frac{a}{2}[2(n-1) - 1]$$

$$= \frac{a}{2}[2n - 3]$$

$$S_{n+1} = \frac{a}{2}[2(n+1) - 1]$$

$$= \frac{a}{2}[2n + 1]$$

$$\frac{S_{n-1}}{S_{n+1}} = \frac{2n - 3}{2n + 1}$$

43. **Sol.(1)**

44. **Sol.(4)**

For de-Broglie wavelength 'λ'

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

when both mass & velocity are changed,

$$\lambda' = \frac{h}{(1.2)m\frac{V}{2}}$$

$$= \frac{5}{3}\frac{h}{mV}$$

$$\frac{\lambda'}{\lambda} = \frac{5}{3}$$

45. **Sol.(2)**

$\theta' = \theta/\mu$

$$\therefore \theta' = \frac{0.2^\circ}{4/3} = 0.15^\circ$$

CHEMISTRY:

46. **Sol.(3)**

47. **Sol.(1)**

Radial node = n − ℓ − 1

Total nodes = n − 1

48. **Sol.(2)**

49. **Sol.(3)**

50. **Sol.(3)**

51. **Sol.(3)**

52. **Sol.(2)**

53. **Sol.(2)**

$$\Lambda^{\circ}_{m}(NH_4OH) = \Lambda^{\circ}_{m}(NH_4Cl) + \Lambda^{\circ}_{m}(NaOH) - \Lambda^{\circ}_{m}(NaCl)$$

$$\alpha = \frac{\Lambda_m}{\Lambda^{\circ}_m}$$

54. **Sol.(3)**

55. **Sol.(4)**

$$E_{cell} = E^{\circ}_{cell} - \frac{0.06}{n}\log Q$$

56. **Sol.(2)**

57. **Sol.(2)**

Hint :- halogen have high negative electron gain enthalpy.

58. **Sol.(2)**

59. **Sol.(1)**

O_2^+ have maximum bond order stability ∝ bond order

60. **Sol.(1)**

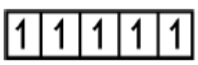
61. **Sol.(4)**

$Mn^{+2} \rightarrow 3d^5 \rightarrow$ stable

62. **Sol.(4)**

63. **Sol.(1)**

$Mn^{+2} \longrightarrow d^5$



64. **Sol.(4)**

65. **Sol.(2)**

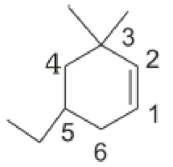
Colour of $BaCrO_4$ is yellow

H_2S is a weak acid it does not produce free S^{2-} ion

66. **Sol.(2)**

$C_2O_4^{-2}$ is bidentate ligand.

67. **Sol.(1)**



5-ethyl-3,3-dimethyl cyclohexane

68. **Sol.(2)**

69. **Sol.(3)**

For zero order reaction

$[A]_t = [A]_0 - Kt$

70. **Sol.(2)**

71. **Sol.(1)**

Metamerism never shown by alkenes.

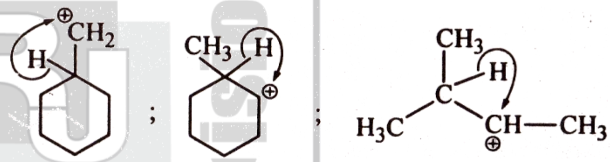
72. **Sol.(2)**

73. **Sol.(2)**

$$C_6H_5-\overset{O}{\overset{\|}{C}}-CH_3 \xrightarrow[\text{(ii) } H_3O^{\oplus}]{\text{(i) Li AlH}_4} C_6H_5-\overset{OH}{\overset{|}{C}H}-CH_3$$

2° alcohol

74. **Sol.(1)**



75. **Sol.(3)**

76. **Sol.(2)**

$C_2H_5-NH-C_2H_5$ is a secondary amine, therefore, it will not give carbylamine test.

77. **Sol.(2)**

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$$

$$V_2 = \frac{P_1V_1T_2}{P_2T_1} = \frac{700 \times 40 \times 273}{760 \times 300}$$

$V_2 = 33.52$

22400mL of N_2 consis 28 g then 33.52 mL g N_2 confain

$$\frac{33.52 \times 28}{22400}$$

$$N\% = \frac{0.0419}{0.25} \times 100$$

=16.76

78. **Sol.(1)**

79. **Sol.(2)**

80. **Sol.(2)**

81. **Sol.(3)**

82. **Sol.(1)**

83. **Sol.(2)**

Noble gases being monoatomic have no interatomic force except weak dispersion force so they have low boiling point.

84. **Sol.(2)**

85. **Sol.(1)**

86. **Sol.(3)**

87. **Sol.(4)**

88. **Sol.(2)**

89. **Sol.(2)**

90. **Sol.(3)**