FT - 9 (FR) (NEET - CBSE, GSEB) (06 - 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	4	4	4	3	4	1	4	4	3	2	3	3	4	2	1	3	2	3	3	1
Q	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
Ans	4	3	1	1	4	2	2	4	2	4	2	4	3	2	4	4	3	1	2	4
Q	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
Ans	4	2	3	2	2	2	2	2	1	4	4	2	2	3	2	4	2	3	4	2
Q	**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
Ans	1	1	3	4	1	2	4	1	2	2	4	1	1	3	2	2	4	2	3	1
Q	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**
Ans	1	4	2	4	4	4	1	1	1	1	2	2	3	3	1	4	3	1	2	2
Q	**101**	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**	**111**	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**
Ans	2	3	3	4	4	2	4	1	1	2	4	2	2	1	1	2	4	4	2	2
Q	**121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**	**131**	**132**	**133**	**134**	**135**	**136**	**137**	**138**	**139**	**140**
Ans	1	2	4	2	2	1	1	2	2	4	1	1	2	2	3	2	3	4	2	3
Q	**141**	**142**	**143**	**144**	**145**	**146**	**147**	**148**	**149**	**150**	**151**	**152**	**153**	**154**	**155**	**156**	**157**	**158**	**159**	**160**
Ans	2	3	2	3	1	2	3	2	4	3	3	1	1	4	4	3	4	2	4	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	4	3	1	3	1	3	3	3	4	2	4	3	1	2	4	2	4	2

PHYSICS:

1. Sol. (4)

$\vec{A} \times \vec{B}$ is perpendicular to plane containing $\vec{A}$ & $\vec{B}$

$\vec{A} \cdot \vec{B}$ is scalar quantity

2. Sol. (4)

Relative error is unitless and dimensionless. Absolute error has dimension.

3. Sol. (4)

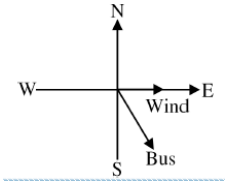
$\Rightarrow$ Acceleration = $4t - 3 \Rightarrow$ at $t = 1 \Rightarrow a = 1$ m/s^2

$\Rightarrow v = 2t^2 - 3t + 1 \Rightarrow$ at $t = 2 \Rightarrow v = 3$ m/s^2

$\Rightarrow a = 0 \Rightarrow 4t - 3 = 0 \Rightarrow t = \frac{3}{4}$ sec

$\Rightarrow a_{avg} = \frac{\Delta v}{\Delta t} = \frac{v_2 - v_1}{t_2 - t_1} = \frac{3-1}{2-0} = 1$ m/s^2

4. Sol. (3)



Direction of flag is opposite to direction of bus with respect to wind or same as direction of wind w.r.t. bus.

$\vec{V}_{WB} = \vec{V}_W - \vec{V}_B$

$\Rightarrow \vec{V}_B = \vec{V}_W - \vec{V}_{WB} = x\hat{i} - y\hat{j}$

5. Sol. (4)

$T + m_1 g = T_2 = m_2 g$

$T = (m_2 - m_1)g$

6. Sol. (1)

$$V_{CM} = \frac{V_m M_m + V_b M_b}{M_m + M_b}$$

$2(30 + 15) = V_m \times 15 + 1 \times 30$

$\frac{90 - 30}{15} = V_m$

$V_m = 4$ m/s w.r.t ground

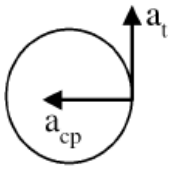
$V_{mB} = V_m - V_B$

$= 4 - 1 = 3$ (right)

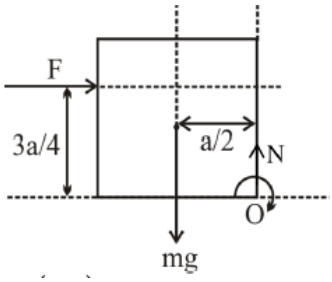
7. Sol. (4)

It is non uniform circular motion. Velocity is along tangent.

Acceleration has two components a_{cp} and a_t.



8. Sol. (4)



$$F\left(\frac{3a}{4}\right) = mg\left(\frac{a}{2}\right)$$

$$F = \frac{2}{3}mg$$

9. Sol. (3)

mg ℓ_2 = 16 gℓ_1 .....(i)

mg ℓ_1 = 4gℓ_2 .....(ii)

$$\Rightarrow \frac{16}{m} = \frac{m}{4} \Rightarrow m = 8kg$$

10. Sol. (2)

$$V = -\frac{GM}{2R^3}\left[3R^2 - r^2\right]$$

Potential due to solid sphere

$$V_s = -\frac{GM}{2R^3}\left[3R^2 - R^2/4\right]$$

$$= -\frac{11}{8}\frac{GM}{R}$$

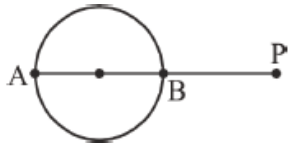
Potential due to removed part

$$V_c = -\frac{3}{2}\frac{GM'}{R/2} = -\frac{3}{8}\frac{GM}{R}$$

$V_{Net} = V_s - V_c$

$$= \frac{-11GM}{8R} + \frac{3GM}{8R} = -\frac{GM}{R}$$

11. Sol. (3)



For elements A & B, no perpedicular components exist.

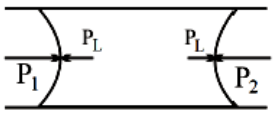
12. Sol. (3)

$$\rho_{mix} = \frac{m_1 + m_2}{\frac{m_1}{\rho_1} + \frac{m_2}{\rho_2}}$$

$$= \frac{5}{\frac{1}{2} + \frac{4}{3}}$$

$$= \frac{30}{11} = 2.7$$

13. Sol. (4)

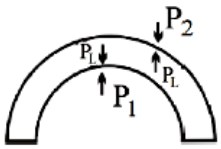


$$P_1 - P_L = \frac{2T}{R_1}$$

$$P_2 - P_L = \frac{2T}{R_2}$$

Subtracting

$$P_1 - P_2 = 2T\left(\frac{1}{R_1} - \frac{1}{R_2}\right) \quad \text{.....case (a)}$$



$$P_1 - P_L = \frac{2T}{R_1}$$

$$P_L - P_2 = \frac{2T}{R_2}$$

Adding

$$P_1 - P_2 = 2T\left(\frac{1}{R_1} + \frac{1}{R_2}\right) \quad \text{.....case (b)}$$

14. Sol. (2)

$P_0V_0 = \frac{P_0T}{2}$

$T = 2T_0$

$\Delta U = \frac{f}{2}nR\,\Delta T = \frac{3}{2}(2)R(2T_0 - T_0) = 3RT_0$

$P_0V_0 = nRT_0$

$T_0 = \frac{P_0V_0}{nR} = \frac{P_0V_0}{2R}$

$$\Delta U = (3R)\left(\frac{P_0V_0}{2R}\right) = \frac{3P_0V_0}{2}$$

15. Sol. (1)

$$W = \frac{P_iV_i - P_fV_f}{(\gamma - 1)} = \frac{100 \times 4 - 200 \times 3}{(1.4 - 1)}$$

$$= -\frac{200}{0.4} = -500J$$

16. Sol. (3)

$\Rightarrow$ for P $R_1 > R_2$

$$\frac{1}{f} = (\mu - 1)\left(-\frac{1}{R_1} + \frac{1}{R_2}\right)$$

$$\Rightarrow \frac{1}{f} = (\mu - 1)\left(\frac{-R_2 + R_1}{R_1R_2}\right) = +ve \quad \because R_1 > R_2$$

so, converging

$\Rightarrow$ for Q $R_1 < R_2$

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

$$\Rightarrow \frac{1}{f} = (\mu - 1)\left(\frac{R_2 - R_1}{R_1R_2}\right) = +ve \quad \because R_1 < R_2$$

so, converging

17. **Sol. (2)**

$y_1 = a_1 \sin\left(\omega t - \frac{2\pi x}{\lambda}\right)$

$y_2 = a_2 \cos\left(\omega t - \frac{2\pi x}{\lambda} + \phi\right)$

as sin $\left(\frac{\pi}{2} + \theta\right) = \cos\theta$

so, $y_2 = a_2 \sin\left(\omega t - \frac{2\pi x}{\lambda} + \phi + \frac{\pi}{2}\right)$

Phase difference between Y_1 and Y_2 is $\left(\phi + \frac{\pi}{2}\right)$

Path difference = $\frac{\lambda}{2\pi}\left(\phi + \frac{\pi}{2}\right)$

18. **Sol. (3)**

Slop of V_s vs v curve is $\frac{h}{e}$ = constant

19. **Sol. (3)**

OOP :-

$\lambda_1 = 2\ell$, $\lambda_2 = \ell$, $\lambda_3 = \frac{2\ell}{3}$

$\lambda_1 : \lambda_2 : \lambda_3 = 1 : \frac{1}{2} : \frac{1}{3}$

20. **Sol. (1)**

$= \frac{1}{2}\varepsilon_0\left(\frac{V}{d}\right)^2$

$= \frac{1}{2}(8.85\times10^{-12})\left(\frac{3000}{0.10}\right)^2$

4×10^{-3} N/m^2

21. **Sol. (4)**

Potential at surface = Potential at centre

$V_{+q} + V_{ind} + V_c$

$V_{ind} = \frac{Kq}{(R+d)} - \frac{Kq}{d} = \frac{-qR}{4\pi\varepsilon_0(d+R)d}$

22. **Sol. (3)**

$C_m = KC_{air}$

$E_m = \frac{E_{air}}{K}$

$V_m = \frac{V_{air}}{K}$

23. **Sol.(1)**

In Ist case

$\frac{8}{R} = \frac{\ell}{100-\ell} = \frac{100/3}{100-\frac{100}{3}} = \frac{1}{2} \Rightarrow R = 16\ \Omega$

In 2nd case

Let new balancing length = ℓ'

$\frac{8}{2R/3} = \frac{\ell'}{100-\ell'} \Rightarrow \frac{8}{\frac{2\times16}{3}} = \frac{\ell'}{100-\ell'}$

$\Rightarrow \frac{3}{4} = \frac{\ell'}{100-\ell'} \Rightarrow \ell' = \frac{300}{7}$ cm

24. **Sol. (1)**

R = 2.5 Ω, r = 0.5Ω

no. of rows = m,

no. of cells in each row = n

$i = \frac{nE}{R + nr/m}$ total cells ⇒ mn = 45

for max. current ; R = nr/m, mR = nr

n = 5m, $5m^2 = 45$, m = 3, n = 15

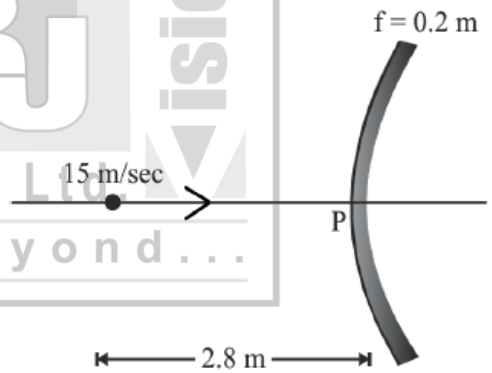
25. **Sol. (4)**

Thermal motion of free electrons ceases at very low temperature.

26. **Sol. (2)**

$m = m_0 \times m_e \Rightarrow 30 = m_0 \times \left[1 + \frac{25}{5}\right] \Rightarrow m_0 = 5$

27. **Sol. (2)**



$\frac{V_i}{V_0} = -\left(\frac{f}{u-f}\right)^2 = -\left[\frac{0.2}{-2.8-(0.2)}\right]^2 = -\left[\frac{1}{15}\right]^2$

$\frac{V_i}{15} = -\left(\frac{1}{15}\right)^2 \Rightarrow = -\frac{1}{15}$ m/ sec

28. **Sol. (4)**

$W_x = 10\beta$

$\frac{2\lambda D}{a} = \frac{10\lambda D}{d}$

$d = 5a \Rightarrow a = \frac{1}{5}$ mm = 0.2 mm

29. **Sol. (2)**

$1.5\beta = 3$mm

$\beta = 2$mm

so $4\beta = 8$ mm

30. Sol. (4)

Magnitude of momentum is same.

31. Sol. (2)

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

$V = \frac{4}{3}\pi R^3 \propto A$

Mass $\propto$ A

So density is independent of A.

32. Sol. (4)

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

$$v_s = \frac{1}{2}.\frac{m}{e}.v^2$$

33. Sol. (3)

Work function is minimum energy required to emit photoelectrons (present on surface).

34. Sol. (2)

$$E = \frac{-13.6eV}{(3)^2}$$

35. Sol. (4)

Time period of Oscillation, $T = 2\pi\sqrt{\frac{I}{MB}}$

$$\Rightarrow \frac{1}{4} = 2\pi\sqrt{\frac{9.8\times10^6}{M\times0.049}}$$

$$\Rightarrow \frac{1}{16} = 4\pi^2 \times \frac{9.8\times10^{-6}}{M\times49\times10^{-3}}$$

$$M = \frac{4\pi^2\times9.8\times10^{-6}}{49\times10^{-3}}\times16$$

$$= \frac{4\pi^2\times9.8\times16\times10^{-3}}{49}$$

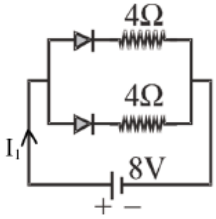
$= 12.8\pi^2 \times 10^{-3} \times 10^{-2} \times 10^2 = 1280\pi^2 \times 10^{-5}$ Am^2

36. Sol. (4)

In forward bias majority charge carriers are move towards the junction.

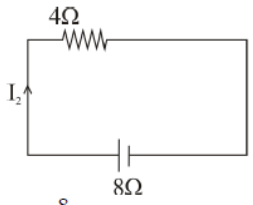
37. Sol. (3)

In circuit A both diodes are in forward bias



$$I_1 = \frac{8}{2} = 4A$$

In circuit B one diode in FB and other in RB



$$I_2 = \frac{8}{4} = 2A$$

38. Sol. (1)

$t\left(1-\frac{1}{\mu}\right)$ = Shift

$$2 = t\left(1-\frac{1}{1.5}\right)$$

t = 6 cm

39. Sol. (2)

1MSD = $\frac{1}{10}$ cm = 0.1cm = 1mm;

LC = $\left(\frac{10-9}{10}\right)$1mm = 0.1mm

Figure (a) corresponds to zero error :

Zero Error ⇒ -ve

Zero Error = –(10–4)×0.1mm = –0.6mm

= –0.06cm

Figure (b) corresponds to measurement :

MSR = 5.3 cm, VSR = 7 × 0.1 mm

Corrected reading = 5.3 cm + 0.07cm – (–0.06cm)

= 5.43cm

40. Sol. (4)

Let, $\hat{E} = x\hat{i} + y\hat{j} + z\hat{k}$

$\hat{E}.\hat{v} = 0$, Z = 0

$\hat{E}.\hat{B} = 0$, 3x + 4y = 0

$\left|\hat{E}\right| = 1$, $x^2 + y^2 = 1$

$\hat{E}\times\hat{B}$ must be along $\hat{k}$

so $\hat{E} = \frac{4\hat{i}}{5} - \frac{3}{5}\hat{j}$

41. Sol. (4)

This is possible when phase difference is $\frac{\pi}{2}$ between current and voltage. So correct answer will be option (4).

42. Sol. (2)

$$U' = \frac{U}{A\ell} = \frac{1LI^2}{2A\ell}$$

$U' \propto I^2$

43. Sol. (3)

A galvanometer is used to measure the current and find direction of current. It can also measure voltage.

⇒ Principle of moving coil galvanometer is that a current carrying coil, when placed in an external magnetic field, experiences magnetic torque.

⇒ Sensitivity of galvanometer depends on:-

(a) Number of turns in its coil

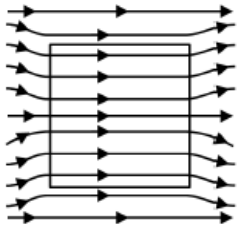
(b) magnetic field

(c) Area of coil

(d) Torsion constant of the spring and suspension wire.

44. Sol. (2)

When a bar of soft iron is placed in the uniform magnetic field which is parallel to it; because of large permeability of soft iron, magnetic lines of force prefer to pass through it. Concentration of lines in soft iron bar increases as shown in figure.



45. Sol. (2)

$$F = -\frac{dU}{dX}$$

$$\Rightarrow \int dU = -\int f dX$$

⇒ $U_f - U_i$ = negative

⇒ $U_f < U_i$ mean PE decreases

CHEMISTRY:

46. Sol.(2)

47. Sol.(2)

48. Sol.(2)

49. Sol.(1)

50. Sol.(4)

51. Sol.(4)

52. Sol.(2)

53. Sol.(2)

54. Sol.(3)

55. Sol.(2)

56. Sol.(4)

57. Sol.(2)

58. Sol.(3)

59. Sol.(4)

(A) Carbylamine test (IV) Aniline

(B) Bayer's test (III) Ethylene

(C) Iodoform test (II) Acetone

(D) Phthalein dye test (I) Phenol

60. Sol.(2)

61. Sol.(1)

62. Sol.(1)

Solid salt treated with dil. H_2SO_4		Anion detected	
A	Effervescence of colourless gas	I	CO_3^{2-}
B	Gas with smell of rotten egg	II	S^{2-}
C	Yellowish green gas with pungent and suffocating smell	III	Cl^-
D	Brown fumes	IV	NO_2^-

63. Sol.(3)

64. Sol.(4)

3d series Max M.P = Cr

4d series Min M.P = Cd

65. Sol.(1)

Ce → Lu

Z_{eff} ↑ size ↓ Polarisation ↑ CoV. ↑ Acidic ↑ Basic ↓

66. Sol.(2)

67. Sol.(4)

68. Sol.(1)

69. Sol.(2)

70. Sol.(2)

71. Sol.(4)

72. Sol.(1)

73. Sol.(1)

Covalent characters

$EX_3 < EX_5$

74. Sol.(3)

75. Sol.(2)

76. Sol.(2)

77. Sol.(4)

78. Sol.(2)

79. Sol.(3)

80. Sol.(1)

81. Sol.(1)

82. Sol.(4)

83. Sol.(2)

84. Sol.(4)

$\Delta H = \Delta U + (\Delta ng)\, RT$

$= 5\, kcal + 2 \times \frac{2}{1000} \times 400$

= 6.6 kcal

$\Delta G = \Delta H - T\,\Delta S$

$= 6.6 \text{ kcal} - 400 \left(\frac{50}{1000}\right) \text{kcal}$

= (6.6 - 20) kcal

= –13.4 kcal

85. Sol.(4)

86. Sol.(4)

87. Sol.(1)

$X_2Y \rightarrow 2X^+ + Y^{-2}$

$\Lambda_m^\infty = 2 \times 45 + 1 \times 110 = 200\, S\, cm^2\, mol^{-1}$

88. Sol.(1)

89. Sol.(1)

90. Sol.(1)