FT - 5 (FR) (NEET - CBSE, GSEB) (02 - 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	4	1	4	1	1	3	1	2	1	3	4	3	3	2	4	3	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	3	1	3	4	Bonus	4	1	1	2	2	3	1	1	4	1	1	2	3
Q	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
Ans	4	3	2	2	4	1	2	3	1	4	3	2	4	1	1	3	3	3	1	2
Q	**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
Ans	4	2	3	3	2	2	3	4	4	1	2	1	1	2	3	2	1	1	1	3
Q	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**
Ans	2	4	4	4	4	4	1	2	1	3	1	3	1	3	2	1	2	3	2	2
Q	**101**	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**	**111**	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**
Ans	3	4	3	4	3	1	3	4	2	4	2	1	4	1	4	4	3	4	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	4	1	2	1	4	2	4	2	3	4	2	2	2	4	1	3	3	4	3
Q	**141**	**142**	**143**	**144**	**145**	**146**	**147**	**148**	**149**	**150**	**151**	**152**	**153**	**154**	**155**	**156**	**157**	**158**	**159**	**160**
Ans	3	2	2	2	4	3	1	2	3	1	1	1	4	1	1	3	4	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	4	4	2	3	3	1	1	1	1	3	2	4	1	4	4	2	2	3	2	2

PHYSICS:

1. Sol. (4)

$$P = \frac{1}{F} = \frac{f_1 + f_2}{f_1 f_2}$$

2. Sol. (4)

Number of possible emission lines $= \frac{n(n-1)}{2}$

Where $n = 4$; Number $= \frac{4(4-1)}{2} = 6.$

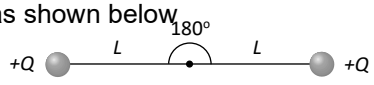
3. Sol. (4)

As the total distance is divided into two equal parts therefore distance averaged speed $= \frac{2v_1v_2}{v_1 + v_2}$

4. Sol. (4)

5. Sol. (1)

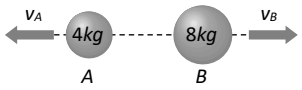
The position of the balls in the satellite will become as shown below



Thus angle $\theta = 180°$ and Force $= \frac{1}{4\pi\varepsilon_0} \cdot \frac{Q^2}{(2L)^2}$

6. Sol. (4)

As the initial momentum of bomb was zero, therefore after explosion two parts should possess numerically equal momentum



i.e. $m_A v_A = m_B v_B \Rightarrow 4 \times v_A = 8 \times 6 \Rightarrow v_A = 12\ m/s$

$\therefore$ Kinetic energy of other mass *A*, = $\frac{1}{2} m_A v_A^2$

= $\frac{1}{2} \times 4 \times (12)^2$ = 288 *J*.

7. Sol. (1)

Both part will have numerically equal momentum and lighter part will have more velocity.

8. Sol. (1)

9. Sol. (3)

Value of *g* decreases when we go from poles to equator.

10. Sol. (1)

In non-uniform electric field. Intensity is more, where the lines are more denser.

11. Sol. (2)

$B = \frac{\Delta p}{\Delta V / V} \Rightarrow \frac{1}{B} \propto \frac{\Delta V}{V}$ [Δp = constant]

12. Sol. (1)

13. Sol. (3)

Change in internal energy is always equal to the heat supplied at constant volume.

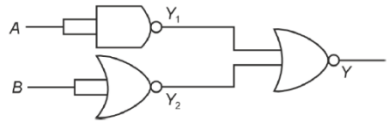
i.e. $\Delta U = (\Delta Q)_V = \mu C_V \Delta T.$

For monoatomic gas $C_V = \frac{3}{2} R$

$\Rightarrow \Delta U = \mu\left(\frac{3}{2} R\right)\Delta T = 1 \times \frac{3}{2} \times 8.31 \times (100 - 0)$

$= 12.48 \times 10^2 J$

14. Sol. (4)



$Y_1 = \overline{A \cdot A} = \overline{A}$

$Y_2 = \overline{B + B} = \overline{B}$

$Y = \overline{Y_1 + Y_2}$

$= \overline{\overline{A} + \overline{B}} = \overline{\overline{A}} \cdot \overline{\overline{B}}$

= *A.B* is similar to output of AND Gate

15. Sol. (3)

In isothermal process temperature remains constant.

16. Sol. (3)

Ohm's Law is not obeyed by semiconductors.

17. Sol. (2)

Resistance of parallel group $= \frac{R}{2}$

$\therefore$ Total equivalent resistance = $4 \times \frac{R}{2} = 2R$

18. Sol. (4)

19. Sol. (3)

$\tau = MB \sin\theta = m \times (2l) \times B \sin\theta$

$= 10^{-4} \times 0.1 \times 30 \sin 30° = 1.5 \times 10^{-4} Nm$

20. Sol. (2)

$e = -L\frac{di}{dt} \Rightarrow 8 = L\frac{(4-2)}{0.05} \Rightarrow L = 0.2\ H$

21. Sol. (1)

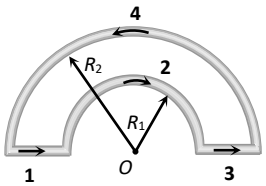
22. Sol. (3)

23. Sol. (3)

$\frac{I}{O} = \frac{f}{(f-u)} \Rightarrow \frac{I}{+5} = \frac{-10}{-10-(-100)} \Rightarrow I = 0.55\ cm$

24. Sol. (1)

In the following figure, magnetic fields at *O* due to sections 1, 2, 3 and 4 are considered as B_1, B_2, B_3 and B_4 respectively.



$B_1 = B_3 = 0$

$B_2 = \frac{\mu_0}{4\pi} \cdot \frac{\pi i}{R_1} \otimes$

$B_4 = \frac{\mu_0}{4\pi} \cdot \frac{\pi i}{R_2} \odot$ As $|B_2| > |B_4|$

So $B_{net} = B_2 - B_4 \Rightarrow B_{net} = \frac{\mu_0 i}{4}\left(\frac{1}{R_1} - \frac{1}{R_2}\right) \otimes$

25. Sol. (3)

Let ν' and λ' represents frequency and wavelength of light in medium respectively.

so $\nu' = \frac{v}{\lambda'} = \frac{c/\mu}{\lambda/\mu} = \frac{c}{\lambda} = \nu$

26. Sol. (4)

Because to form the complete image only two rays are to be passed through the lens and moreover, since the total amount of light released by the object is not passing through the lens, therefore image is faint (intensity is decreased).

27. Sol. (Bonus)

$I_1 = 2\left(\frac{ml^2}{2}\right) + 2(m)\left(\frac{l}{2}\right)^2 = \frac{2}{3} ml^2$

$I_2 = 0 + 2\left(\frac{ml^2}{3}\right) + ml^2 = \left(\frac{5}{3}\right) ml^2$

$I_3 = 4\left[\frac{ml^2}{3} \sin^2 45°\right] = \frac{2}{3} ml^2 = I_1$

Note $I_1 = I_3$ (think why?)

28. Sol. (4)

$\frac{I_1}{I_2} = \frac{100}{1}$

Now $\frac{I_{max}}{I_{min}} = \left(\frac{\sqrt{\frac{I_1}{I_2}} + 1}{\sqrt{\frac{I_1}{I_2}} - 1}\right)^2 = \left(\frac{\sqrt{100} + 1}{\sqrt{100} - 1}\right)^2 = \frac{121}{81} \approx \frac{3}{2}$

29. Sol. (1)

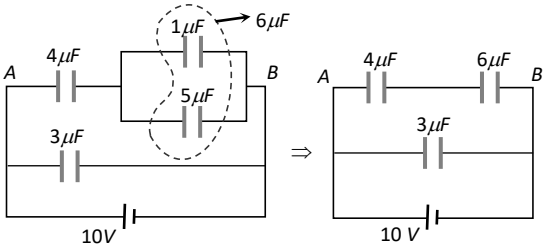
By changing distance of source, photoelectric current changes. But there is no change in stopping potential.

30. Sol. (1)

31. Sol. (2)

Equivalent capacity between A and B

$= \frac{6 \times 4}{10} = 2.4\ \mu F$



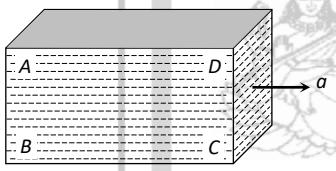
Hence charge across 4μF (Since in series combination charge remains constant) or 6 μF = 2.4 × 10 = 24 μC.

32. Sol. (2)

33. Sol. (3)

Thrust $F = u\left(\frac{dm}{dt}\right) = 5 \times 10^4 \times 40 = 2 \times 10^6\ N$

34. Sol. (1)



Due to acceleration towards right, there will be a pseudo force in a left direction. So the pressure will be more on rear side (Points *A* and *B*) in comparison with front side (Point *D* and *C*).

Also due to height of liquid column pressure will be more at the bottom (points *B* and *C*) in comparison with top (point *A* and *D*).

So overall maximum pressure will be at point *B* and minimum pressure will be at point *D*.

35. Sol. (1)

36. Sol. (4)

Standard equation of S.H.M. $\frac{d^2y}{dt^2} = -\omega^2 y,$ is not satisfied by $y = a\tan\omega t$.

37. Sol. (1)

$$F = \frac{1}{4\pi\varepsilon_0}\frac{(+7\times10^{-6})(-5\times10^{-6})}{r^2} = -\frac{1}{4\pi\varepsilon_0}\frac{35\times10^{12}}{r^2}\ N$$

$$F' = \frac{1}{4\pi\varepsilon_0}\frac{(+5\times10^{-6})(-7\times10^{-6})}{r^2} = -\frac{1}{4\pi\varepsilon_0}\frac{35\times10^{12}}{r^2}\ N$$

38. Sol. (1)

The electric potential $V(x,y,z) = 4x^2\ volt$

Now $\vec{E} = -\left(\hat{i}\frac{\partial V}{\partial x} + \hat{j}\frac{\partial V}{\partial y} + \hat{k}\frac{\partial V}{\partial z}\right)$

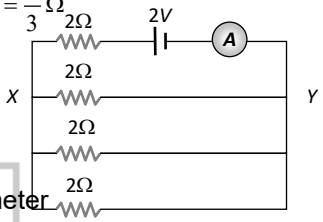
Now $\frac{\partial V}{\partial x} = 8x, \frac{\partial V}{\partial y} = 0$ and $\frac{\partial V}{\partial z} = 0$

Hence $\vec{E} = -8x\hat{i}$, so at point (1*m*, 0, 2*m*)

$\vec{E} = -8\hat{i}\ volt/metre$ or 8 along negative *X*-axis.

39. Sol.(2)

Resistance across *XY* $= \frac{2}{3}\Omega$



Total resistance

$= 2 + \frac{2}{3} = \frac{8}{3}\Omega$

Current through ammeter

$= \frac{2}{8/3} = \frac{6}{8} = \frac{3}{4}A$

40. Sol. (3)

Two coherent source must have a constant phase difference otherwise they can not produce interference.

41. Sol. (4)

Here the proton has no acceleration so $E = B = 0.$

When $E = 0$ but $B \neq 0,$ but parallel to the motion of proton, there will be no force acting.

When $E \neq 0$ and $B \neq 0$ and *E, B* and motion of proton (v) are mutually perpendicular, there may be no net force. Forces due to *E* and *B* cancel each other.

42. Sol. (3)

$e = -\frac{d\phi}{dt} = -(16t + 3) = -67 units$

43. Sol. (2)

From figure

$< i = 60^o, < r = 30^o$

so $\mu = \frac{\sin 60}{\sin 30} = \sqrt{3}$

44. Sol. (2)

Informative facts. At distance less than 0.7 fm, the nuclear force becomes repulsive.

45. Sol. (4)

Total capacitance $\frac{1}{C}=\frac{1}{20}+\frac{1}{8}+\frac{1}{12}$

$\Rightarrow \quad C=\frac{120}{31}\mu F$

Total charge $Q=CV=\frac{120}{31}\times 300=1161\mu C$

Charge, through 4 μF condenser $=\frac{1161}{2}=580\mu C$

and potential difference across it $=\frac{580}{4}=145V$

CHEMISTRY:

46. Sol.(1)

Stronger is the ligand field strength more is the crystal field splitting energy and smaller will be the wavelength of light absorbed.

Ligand field strength: CN > NH_3 > H_2O

Correct order of wavelength of light absorbed

$$[Cr(H_2O)_6]^{3+} > [Cr(NH_3)_6]^{3+} > [Cr(CN)_6]^{3-}$$

47. Sol.(2)

$1 \rightarrow$ Un

$0 \rightarrow$ nil

$7 \rightarrow$ Sept

Symbol $\Rightarrow$ Uns

48. Sol.(3)

Number of radial nodes = n – ℓ – 1

For 4f $\Rightarrow$ radial nodes = 4– 3 – 1 = 0

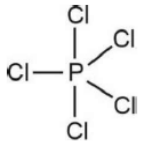
49. Sol.(1)

50. Sol.(4)

51. Sol. (3)

52. Sol.(2)

53. Sol.(4)



PCl_5 has trigonal bipyramidal shape which contains six 90º bond angles.

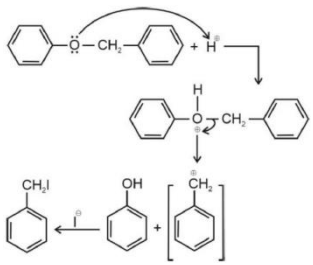
54. Sol.(1)

$$pH = 7 - \frac{1}{2}pK_b - \frac{1}{2}\log c$$
$$= 7 - \frac{4.76}{2} - \frac{1}{2}\log 0.1$$
$$= 5.12$$

55. Sol.(1)

$$\because r_{75\%} = 2t_{50\%}$$
$$\therefore \frac{t_{75\%}}{t_{50\%}} = \frac{2}{1}$$

56. Sol.(3)



57. Sol.(3)

$$Al_2(SO_4)_3 \Rightarrow 2Al^{3+} + 3SO_4^{2-}$$
$$1-0.4 \qquad 2\times0.4 \quad 3\times0.4$$

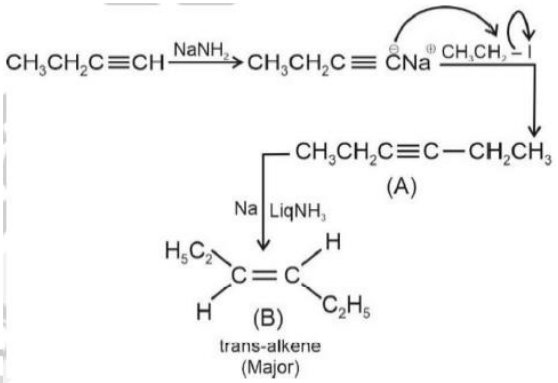
$$i = \frac{1-0.4+2\times0.4+3\times0.4}{1} = 2.6$$

58. Sol.(3)

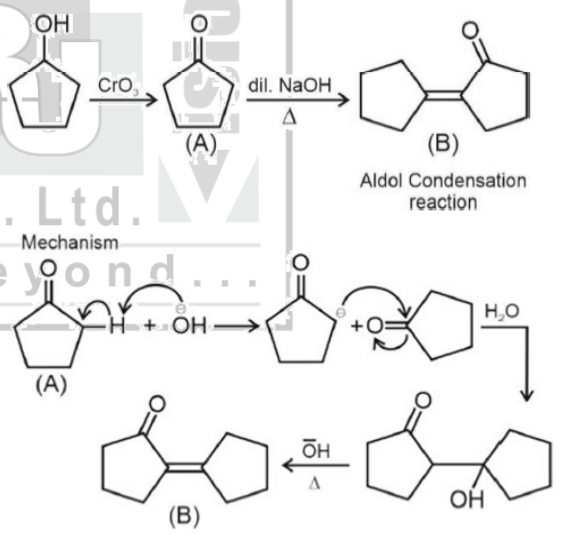
59. Sol. (1)

Oxidation state of non-metal increases acidic nature of oxide increase $\overset{+7}{Cl_2}O_7$ is most acidic.

60. Sol.(2)



61. Sol.(4)



62. Sol.(2)

63. Sol.(3)

$$K_C = 10^{\left(\frac{n\times E^\circ}{0.059}\right)}$$
$$= 10^{\left(\frac{2\times0.59}{0.059}\right)} = 10^{20}$$

64. Sol.(3)

$$CH_3 - Cl + Ag - O - \ddot{N} = O \longrightarrow \underset{\text{Major}}{CH_3 - NO_2}$$

In this reaction, nitrogen is acting as a nucleophile.

65. Sol.(2)

Correct order of ligand field strength according to spectrochemical series is

$NH_3 > H_2O > F^- > SCN^-$

66. Sol.(2)

Presence of electron withdrawing group at ortho and para positions in phenol increases the stability of phenoxide ion so the acidity while presence of electron - releasing group decreases the acidity.

67. Sol.(3)

H_3PO_4 is a tribasic acid.

68. Sol.(4)

69. Sol.(4)

Stability of +2 oxidation state increases down the group in group 14 elements.

70. Sol. (1)

71. Sol.(2)

Proline is a non-essential amino acid.

72. Sol.(1)

Primary amines take part in carbylamine reaction (isocyanide test) to form foul smelling isocyanide.

73. Sol.(1)

74. Sol.(2)

Q = ne [$\because$ Q = it]

i × t =ne

$$n = \frac{i \times t}{e} = \frac{1 \times 120}{1.6 \times 10^{-19}}$$

7.5×10^{20}

75. Sol.(3)

Number of atom in one CH_4 molecule is five so 2 mole of CH_4 gives 10 mol of atoms.

76. Sol.(2)

77. Sol.(1)

For spontaneous reactions at all temperatures, H must be negative and S must be positive.

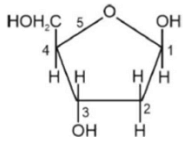
78. Sol.(1)

79. Sol.(1)

80. Sol.(3)

Sugar moiety present in DNA is

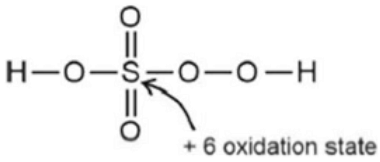
β-D-2-deoxyribose



81. Sol.(2)

$2D \rightarrow A + E$	$\Delta H = -700$ KJ/mol
$3B \rightarrow 2C + D$	$\Delta H = -250$ KJ/mol
$A \rightarrow 2B$	$\Delta H = +600$ KJ/mol
$B + D \rightarrow E + 2C$	$\Delta H = -350$ KJ/mol

82. Sol.(4)



83. Sol.(4)

Catalyst lowers the activation energy of both forward and reverse directions.

Catalyst does not alter the equilibrium composition.

84. Sol.(4)

$$\therefore k_{55^\circ C} = 2k_{45^\circ}$$

$$k_{45^\circ C} = 2k_{35^\circ C}$$

$$k_{35^\circ C} = 2k_{25^\circ C}$$

$$\therefore k_{55^\circ C} = 8k_{25^\circ C}$$

$$\frac{k55^\circ c}{k_{25^\circ C}} = \frac{8}{1}$$

85. Sol.(4)

86. Sol.(4)

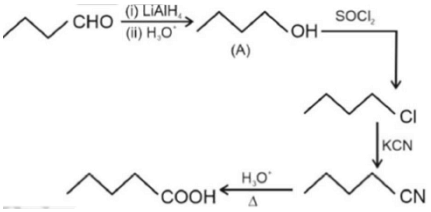
Compounds which contain acidic hydrogen evolve H_2 gas on reaction with sodium.

Ether does not contain acidic hydrogen.

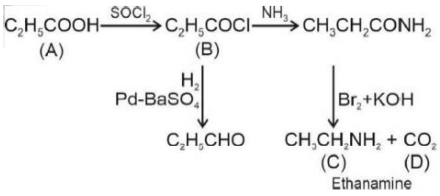
87. Sol. (1)

1° alcohols react with Lucas reagent only on heating and give while turbidity.

88. Sol.(2)



89. Sol.(1)



Molecular mass of A = 62 u

90. Sol.(3)