

FT - 3 (FR) (NEET - CBSE, GSEB) (31 - 03 - 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	1	2	4	4	3	4	1	2	1	2	3	4	4	2	1	3	1	3
Q	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans	2	3	1	1	4	2	1	1	3	3	2	2	1	3	3	3	3	1	4	4
Q	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans	3	1	4	4	4	1	4	3	3	3	4	2	2	4	3	4	2	3	4	3
Q	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Ans	4	1	1	4	2	1	1	4	1	2	3	2	2	1	1	3	1	4	1	4
Q	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Ans	1	4	3	3	3	1	4	4	2	1	3	4	3	4	1	3	3	1	3	2
Q	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Ans	4	1	3	3	1	1	4	2	3	4	1	3	4	1	3	1	2	4	1	1
Q	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Ans	2	1	4	3	1	4	2	1	3	3	4	4	3	2	3	3	2	1	2	4
Q	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Ans	4	2	3	4	4	4	2	2	4	1	1	2	1	1	3	4	1	3	1	2
Q	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Ans	4	2	1	4	4	4	4	3	2	4	4	3	4	3	2	3	3	4	2	2

PHYSICS:

1. Sol.(4)

$$\text{Energy} = \frac{B^2}{2\mu_r\mu_0} \times \text{volume}$$

$$= \frac{16}{2 \times 40 \times 4\pi \times 10^{-7}} \times 10 \times 10^{-6}$$

$$= \frac{10}{2\pi} = 1.59$$

2. Sol.(4)

$$B_C = \frac{\mu_0 I}{4\pi R} (\pi) \text{ (B at centre of circular arc)}$$

$$= \frac{\mu_0 I}{4R} = \frac{4\pi \times 10^{-7} \times 3}{4 \times \frac{\pi}{10}}$$

$$= 3 \times 10^{-6} \text{ T} = 3\mu\text{T}$$

3. Sol.(1)

After some time both force (gravity and magnetic) becomes equal.

4. Sol.(2)

$$\vec{F} = q(\vec{v} \times \vec{B}) \text{ as angle between } \vec{v} \text{ and } \vec{B} \text{ is } 0^\circ$$

5. Sol.(4)

$$R' = n^2 R = 2^2(2) = 8\Omega$$

6. Sol.(4)

$$V_A = V_B = V_C \left[\because R_A = \frac{R_B R_C}{R_B + R_C} \right]$$

7. Sol. (3)

$$i(R+r) = E$$

$$(0.2)(10+r) = 2.1$$

$$r = 0.5 \Omega$$

8. Sol.(4)

$$V = V_1 + V_2 + V_3 + V_4 = 0$$

9. Sol.(1)

$$V = \frac{k(-Q+q+2q+2Q)}{r} = 0$$

$$\Rightarrow Q = -3q$$

10. Sol.(2)

$$V_B > V_C > V_A$$

11. Sol. (1)

$$\tau = pE \sin \theta$$

$$\tau = qd E \sin \theta$$

$$4 = q \left(\frac{2}{100} \right) (5 \times 10^5) \sin 53^\circ$$

$$q = 0.5 \text{ mC}$$

12. Sol.(2)

Capacitance increases.

⇒ Potential difference decreases.

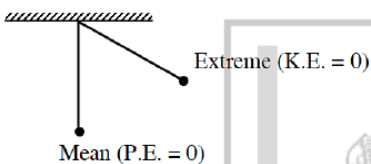
13. Sol.(3)

$$i = 10 \sin 2\omega t$$

$$i_{\text{rms}} = \frac{10}{\sqrt{2}} \approx 7 \text{ A}$$

14. Sol. (4)

15. Sol.(4)



16. Sol.(2)

In adiabatic process

$$P^{1-\gamma} T^\gamma = \text{constant}$$

$$\text{OR } P \propto (T)^{\gamma/\gamma-1}$$

Here, $P \propto T^4$

$$\therefore \frac{\gamma}{\gamma-1} = 4 \Rightarrow \gamma = \frac{C_p}{C_v} = \frac{4}{3}$$

17. Sol.(1)

$$\begin{aligned} (\text{M.I.})_{\text{sys.}} &= \frac{ML^2}{3} \sin^2 45^\circ \times 4 \\ &= \frac{ML^2}{3} \times \frac{1}{2} \times 4 = \frac{2}{3} ML^2 \end{aligned}$$

18. Sol.(3)

$$B = \frac{\frac{\Delta P}{- \frac{\Delta V}{V}}, \frac{\Delta V}{V}}{\frac{\Delta P}{-3\Delta R}} = \frac{3\Delta R}{R}$$

$$B = \frac{\Delta P}{-3\Delta R} \Rightarrow - \frac{\Delta R}{R} = \frac{P}{3B} \quad (\Delta P = P)$$

19. Sol.(1)

Initially speed is zero, then increases & after some time it becomes constant. Acceleration (slope of

v/t curve) of ball first decreases and after some time it becomes zero.

20. Sol.(3)

$$g = \frac{GM}{R^2} = \frac{GM_p}{\left(\frac{D_p}{2}\right)^2} = \frac{4GM_p}{D_p^2}$$

21. Sol. (2)

$$\rho_{\text{mix}} = \frac{m_1 + m_2 + m_3}{3V} = \frac{V(d + 2d + 3d)}{3V} = 2d.$$

22. Sol. (3)

$$v_{\text{max}} = \omega A \Rightarrow v = \frac{\omega A}{2} = \omega \sqrt{A^2 - y^2}$$

$$\Rightarrow A^2 - y^2 = \frac{A^2}{4} \Rightarrow y^2 = \frac{3A^2}{4} \Rightarrow y = \frac{\sqrt{3}A}{2}$$

23. Sol.(1)

$$\rho = \frac{M}{V} = \frac{M}{\frac{4}{3}\pi\left(\frac{D}{2}\right)^3}$$

$$\frac{d\rho}{\rho} = \frac{dM}{M} + 3 \frac{dD}{D}$$

for maximum error.

$$100 \times \frac{d\rho}{\rho} = \left(\frac{dM}{M} \times 100 \right) + 3 \left(\frac{dD}{D} \times 100 \right)$$

$$\% \text{ change in } \rho = 4 + 3 \times 2.5 = 11.5 \%$$

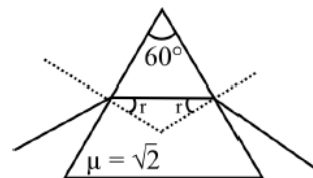
24. Sol. (1)

$$\begin{aligned} H_1 &= H_2 \\ \frac{6^2 \sin^2 \theta}{2(10)} &= \frac{3^2 \sin^2 \theta}{2g_p} \\ g_p &= 2.5 \text{ m/s}^2 \end{aligned}$$

25. Sol.(4)

$$\vec{v}_{\text{av}} = \frac{\Delta \vec{r}}{\Delta t} = \frac{(14-3)\hat{i} + (14-3)\hat{j}}{5-0} = \frac{11}{5}(\hat{i} + \hat{j})$$

26. Sol.(2)



$$A = 60^\circ, \mu = \sqrt{2}$$

$$\Rightarrow r = \frac{A}{2} = 30^\circ \text{ \& } i = e$$

$$\Rightarrow 1 \times \sin i = \sqrt{2} \times \sin 30^\circ$$

$$\Rightarrow i = 45^\circ = e$$

27. Sol.(1)

For electron $\lambda_e = \frac{h}{\sqrt{2mE}}$
 for Photon $E = pc$
 $\Rightarrow \lambda_{ph} = \frac{hc}{E}$
 $\Rightarrow \frac{\lambda_e}{\lambda_{ph}} = \frac{h}{\sqrt{2mE}} \times \frac{E}{hc} = \left(\frac{E}{2m}\right)^{1/2} \frac{1}{c}$

28. Sol.(1)

$\lambda = \frac{h}{\sqrt{2mE_k}}$
 ($\because E_k$ is same for both)
 $\Rightarrow \frac{\lambda_p}{\lambda_a} = \sqrt{\frac{4m}{m}} = 2 : 1$

29. Sol.(3)

In isothermal process $\Delta T = 0 \Rightarrow \Delta U = 0$

$\Delta Q = \Delta U + \Delta W \Rightarrow \Delta Q = 0 + \Delta W$

$\Delta Q = \Delta W \Rightarrow \boxed{A \rightarrow 3,4}$

In adiabatic process, $\Delta Q = 0 \Rightarrow \boxed{B \rightarrow 2}$

In isochoric process, $\Delta V = 0 \Rightarrow \Delta W = p \Delta V = 0$

$\Rightarrow \Delta Q = \Delta W + \Delta U$

$\Rightarrow \Delta Q = 0 + \Delta U = \Delta U \Rightarrow \boxed{C \rightarrow 1}$

In cyclic process,

$\Delta U = 0, \Delta Q = 0 + \Delta W = \Delta W \Rightarrow \boxed{D \rightarrow 3,4}$

30. Sol.(3)

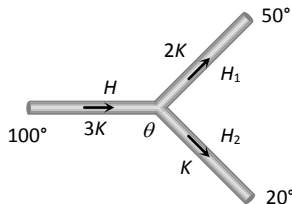
In N type semiconductor majority charge carriers are e^- and P type semiconductor majority charge carriers are holes.

$I = neAV_d = neA(\mu E)$

$\mu_e > \mu_h \Rightarrow I_e > I_h$

31. Sol. (2)

Let the temperature of junction be θ then according to following figure.



$H = H_1 + H_2$

$\Rightarrow \frac{3K \times A \times (100 - \theta)}{l} = \frac{2KA(\theta - 50)}{l} + \frac{KA(\theta - 20)}{l}$

$\Rightarrow 300 - 3\theta = 3\theta - 120 \Rightarrow \theta = 70^\circ C$

32. Sol.(2)

33. Sol.(1)

$\vec{0} = m\vec{v}_1 + m\vec{v}_2$

$\vec{v}_1 = -\vec{v}_2 \dots\dots(1)$

$e = \frac{-2v_1}{12} \Rightarrow \frac{1}{3} = \frac{-2v_1}{12}$

$\Rightarrow v_1 = -2 \text{ m/s and } v_2 = 2 \text{ m/s}$

So, $|v_1| = |v_2| = 2 \text{ m/s}$

34. Sol.(3)

3^{rd} excited state means $n = 4$

So no. of spectral line = $\frac{n(n-1)}{2} = 6$

35. Sol.(3)

$p = \frac{E}{C} = \frac{3 \times 10^3 \times 1.6 \times 10^{-19}}{3 \times 10^8}$

$p = 1.6 \times 10^{-24} \text{ kg ms}^{-1}$

36. Sol.(3)

$\frac{1}{2} kx^2 = \frac{1}{2} mv^2 \left(1 + \frac{K^2}{R^2}\right)$

$\Rightarrow 100 x^2 = 2 \times 3^2 \times \left(1 + \frac{1}{2}\right)$

$\Rightarrow 100 x^2 = 2 \times 9 \times \frac{3}{2} \Rightarrow x^2 = \frac{27}{100}$

$\Rightarrow x = 0.52 \text{ m} \approx 52 \text{ cm}$

37. Sol.(3)

$\vec{r} = \cos \omega t \hat{i} + \sin \omega t \hat{j}$

$\vec{v} = -\omega \sin \omega t \hat{i} + \omega \cos \omega t \hat{j}$

$\vec{a} = -\omega^2 \cos \omega t \hat{i} + \omega^2 \sin \omega t \hat{j}$

$\Rightarrow \vec{v} \cdot \vec{r} = 0$

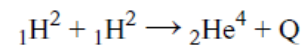
velocity is perpendicular to \vec{r} .

$\Rightarrow \vec{a} = -\omega^2(\vec{r})$

38. Sol. (1)

39. Sol.(4)

40. Sol. (4)



$\Delta E = 4(7) - 2(1.1 + 1.1)$

$= 23.6 \text{ MeV}$

41. Sol. (3)

According to Einstein's photoelectric equation.

42. Sol. (1)

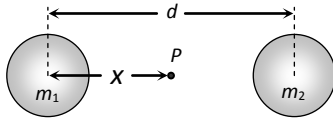
$\cos \phi = \frac{1}{2} \Rightarrow \phi = 60^\circ \quad \tan 60^\circ = \frac{\omega L}{R} \Rightarrow L = \frac{\sqrt{3}}{\pi} H$

43. Sol.(4)

$$v = \sqrt{\frac{\gamma P}{\rho}}; \text{ as } P \text{ changes, } \rho \text{ also changes. Hence}$$

$\frac{P}{\rho}$ remains constant so speed remains constant.

44. Sol. (4)

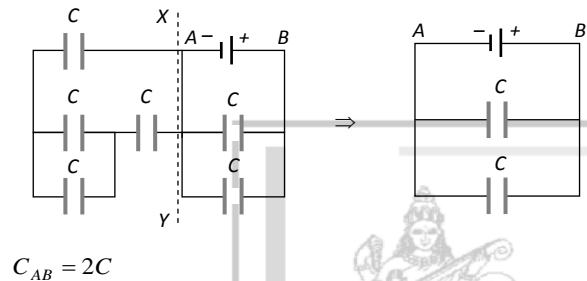


Force will be zero at the point of zero intensity

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

45. Sol. (4)

All capacitor lying in left side of line XY are short circuited so circuit can be reduced as follows

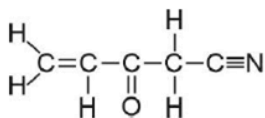


$$C_{AB} = 2C$$



CHEMISTRY:

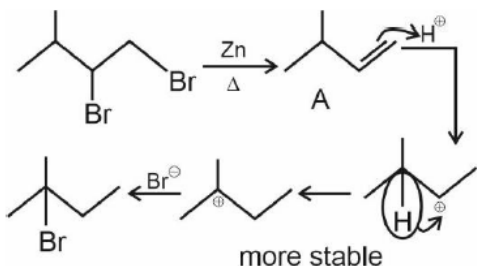
46. Sol.(1)



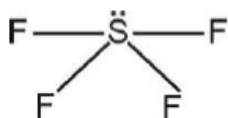
Number of σ - bonds = 11

Number of π - bonds = 4

47. Sol.(4)



48. Sol.(3)

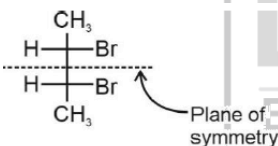


See-saw structure, $\mu \neq 0$

Two different S - F bond lengths.

49. Sol.(3)

The compound which contains plane of symmetry is optically inactive.



50. Sol.(3)

Phenol is stronger acid than alcohol because of the fact that phenoxide ion is less basic than $\text{C}_2\text{H}_5\text{O}^-$ due to resonance stabilisation.

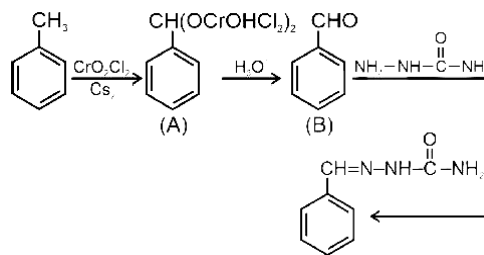
51. Sol. (4)

52. Sol.(2)

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

Lower is the value of pK_a stronger is the acid.

53. Sol.(2)



54. Sol.(4)

Aromatic amines cannot be synthesised by Gabriel phthalimide synthesis.

55. Sol.(3)

56. Sol.(4)

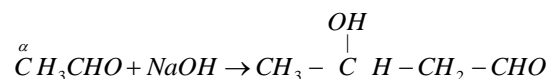
$$\Delta x = \frac{h}{4\pi m \Delta v}$$

$$\begin{aligned}
 \Delta x &= \frac{6.626 \times 10^{-34} \text{ kgm}^2 \text{ s}^{-1} \times 10^3}{4 \times 3.142 \times \left(\frac{2}{100} \times 45 \text{ ms}^{-1} \right) \times 40} \\
 &= 1.46 \times 10^{-33} \text{ m}
 \end{aligned}$$

57. Sol.(2)

List - I		List - II	
a	Phenetole	i	
b	Aspirin	ii	
c	Cumene	iii	
d	Catechol	iv	

58. Sol.(3)



59. Sol.(4)

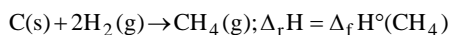
$$n_{\text{H}_2\text{O}} = \frac{w_{\text{H}_2\text{O}}}{m_{\text{H}_2\text{O}}} = \frac{27}{18} = \frac{3}{2} \text{ mol}; n_{\text{Atoms}} = \frac{3}{2} \times 2 = 3 \text{ mol}$$

$$n_{\text{H}_2\text{SO}_4} = \frac{w_{\text{H}_2\text{SO}_4}}{m_{\text{H}_2\text{SO}_4}} = \frac{49}{98} = \frac{1}{2} \text{ mol}; n_{\text{Atoms}} = \frac{1}{2} \times 7 = \frac{7}{2} \text{ mol}$$

$$n_{\text{NaOH}} = \frac{w_{\text{NaOH}}}{m_{\text{NaOH}}} = \frac{80}{40} = 2 \text{ mol}; n_{\text{Atoms}} = 2 \times 3 = 6 \text{ mol}$$

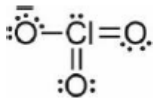
$$n_{\text{CH}_3\text{COOH}} = \frac{w_{\text{CH}_3\text{COOH}}}{m_{\text{CH}_3\text{COOH}}} = \frac{60}{60} = 1 \text{ mol}; n_{\text{Atoms}} = 1 \times 8 = 8 \text{ mol}$$

60. Sol.(3)



$$\begin{aligned} \Delta_f H^\circ(CH_4) &= \sum \Delta_c H_R^\circ - \sum \Delta_c H_P^\circ \\ &= \Delta_c H^\circ(C) + 2\Delta_c H^\circ(H_2) - \Delta_c H^\circ(CH_4) \\ &= (-390) + 2(-285) - (-890) \\ &= -70 \text{ KJ mol}^{-1} \end{aligned}$$

61. Sol.(4)



Total number of l.p. of electrons in ClO_3^- ion is equal to 8.

62. Sol.(1)

63. Sol.(1)

All numerals have decimal. So, all digits are to be counted for significant figures. 10^2 exponent is not counted.

64. Sol.(4)

The maximum number of electrons in the shell with principal quantum number n is equal to $2n^2$.

65. Sol.(2)

Minimum boiling azeotrope is formed by the solution having positive deviation and for solution showing positive deviation ΔH_{mix} , ΔV_{mix} , ΔS_{mix} all are positive and ΔG_{mix} is negative.

66. Sol.(1)

$$\begin{aligned} \Delta T_b &= i K_b m \\ (\Delta T_b)_{urea} &= 1 \times K_b \times 0.3 = 0.3 K_b \\ (\Delta T_b)_{CaCl_2} &= 3 \times K_b \times 0.2 = 0.6 K_b \\ (\Delta T_b)_{NaCl} &= 2 \times K_b \times 0.3 = 0.6 K_b \\ (\Delta T_b)_{AlCl_3} &= 4 \times K_b \times 0.1 = 0.4 K_b \end{aligned}$$

67. Sol.(1)

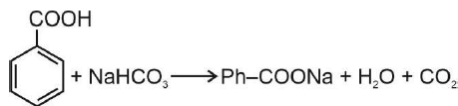
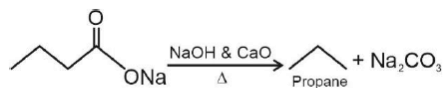
$$\begin{aligned} Z_{Ca} &= \frac{40}{2 \times 96500} \\ m &= Z_{Ca} \text{ it} \\ &= \frac{40}{2 \times 96500} \times 9.65 \times 100 \\ &= 0.2 \text{ g} \end{aligned}$$

68. Sol.(4)

α -D-(+)-Glucopyranose and β -D-(+)-glucopyranose are anomers.

69. Sol.(2)

70. Sol.(2)



71. Sol.(3)

NH_3 (4.90×10^{-30} C.m) has more dipole moment than NF_3 (0.80×10^{-30} C.m)

72. Sol.(2)

73. Sol.(2)

74. Sol.(1)

75. Sol.(1)

F_2 cannot be further oxidised therefore it cannot show disproportionation.

76. Sol.(3)

77. Sol.(1)

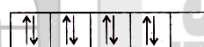
$[Ni(CO_4)]$: Ni^0 , $3d^8 4s^2$ acquires $3d^{10}$ in complex giving sp^3 hybridisation.

$[Fe(CN)_6]^{4-}$: Fe^{+2} , $3d^6$ acquires $3d$



in complex giving $d^2 sp^3$ hybridisation

$[PtCl_4]^{2-}$: Pt^{+2} $5d^8$ acquires $5d$ in complex



giving dsp^2 hybridisation

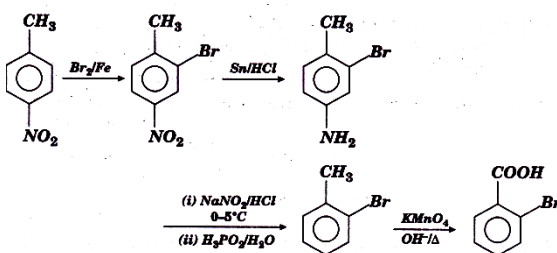
$[Ni(CN)_4]^{2-}$: Ni^{+2} $3d^8$ acquires $3d$ in



complex giving dsp_2

hybridisation

78. Sol.(4)



79. Sol.

(1)

The main intermediate is dichlorocarbene $:CCl_2$.

Here $CHCl_3$ behaves as acid.

80. Sol.(4)

At equilibrium $\Delta G = 0$

$$\Delta H = T\Delta S$$

$$-10 \times 1000 = T \times (-10)$$

$$T = 1000 \text{ K}$$

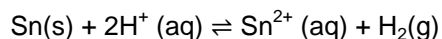
81. Sol.(1)

Chlorophyll – Magnesium
Blood Pigment – Iron
Wilkinson catalyst – Rhodium
Vitamin B₁₂ – Cobalt

82. Sol. (4)

Catalyst does not alter the state of equilibrium.
The extent of reaction remains unchanged. A catalyst decreases the energy barrier by supplying adsorption energy

83. Sol.(3)



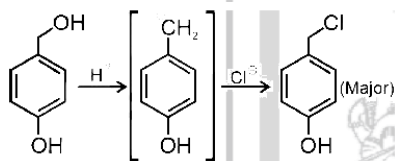
$$Q = \frac{[\text{Sn}^{2+}][\text{H}_2]}{[\text{Sn}][\text{H}^+]^2} = \frac{(0.01)(1)}{(1)(0.1)^2} = 1$$

$$E_{\text{Cell}}^{\circ} = E_{\text{C}}^{\circ} - E_{\text{A}}^{\circ} = 0 - (-0.14) = 0.14\text{V}$$

$$E_{\text{Cell}} = E_{\text{Cell}}^{\circ} - \frac{0.0591}{2} \log Q$$

$$= 0.14 - \frac{0.0591}{2} \log 1 = 0.14\text{V}$$

84. Sol.(3)



85. Sol.(3)

$$\therefore \frac{r_{333}}{r_{283}} = 2^{\frac{333-283}{10}} = 32$$

$$\therefore \frac{r_{283}}{r_{333}} = \frac{1}{32}$$

86. Sol. (1)

87. Sol.(4)

H₂S is Bent shape and Bond angle
(H – S – H) ≠ 180°

88. Sol.(4)

All positions and bond lengths in octahedral SF₆ are equal. There are no separate equatorial and axial positions.

89. Sol.(2)

→ Reaction occur by cyclic bromonium ion by Br₂.

→ No rearrangement by free radical.

→ Cyclic transition state by OSO₄.

90. Sol.(1)

Addition of HCl on unsymmetric alkene follows Markovnikov addition. It follows ionic mechanism.

