



Sri Chaitanya Narayana IIT Academy

(SRI SARVANI EDUCATIONAL SOCIETY)

COMMON CENTRAL OFFICE-MADHAPUR-HYDERABAD

Sec: Sr.IPLCO
Time: 3 Hours

JEE-ADVANCE
2011-P2-Model

Date: 20-12-15
Max Marks: 240

KEY & SOLUTIONS

CHEMISTRY

1	C	2	D	3	B	4	D	5	B	6	A
7	C	8	D	9	BD	10	AB	11	ACD	12	AC
13	2	14	7	15	3	16	5	17	4	18	7
19	A-S B-R C-P D-Q	20	A-QS B-QS C-R D-PQR								

PHYSICS

21	C	22	B	23	B	24	A	25	C	26	B
27	B	28	B	29	AD	30	D	31	ABCD	32	AC
33	4	34	1	35	5	36	3	37	4	38	7
39	A-Q; B-P; C-S; D-T	40	A-PR; B-P; C-QR; D-Q								

MATHEMATICS

41	D	42	D	43	B	44	C	45	D	46	B
47	C	48	B	49	ABCD	50	AC	51	AB	52	ABCD
53	3	54	3	55	6	56	4	57	8	58	7
59	A- P,Q,R,S; B-P,R,S; C-P,Q,R,S; D-P,S	60	A-S, B-R, C-P, D-Q								

CHEMISTRY

1. Factual
2. $\Delta H = \text{state function}$
3. $\frac{P}{V} = k = \frac{1}{2} = \text{constant}$

$$\omega = -\int_{V_1}^{V_2} P \cdot dV = -\int_{V_1}^{V_2} \frac{1}{2} dV = -\left[\frac{V_2^2 - V_1^2}{4}\right] = -800 \text{ atm} - \text{Litre} = -81.1 \text{ KJ}$$
4. $\omega = 2 \times 5 = 10 \text{ atm Litre} = 1013.25 \text{ Joules}$
 $\Delta V = -400 + 1013.25 = 613.25 \text{ Joules}$
5. (B). Conceptual
- 6.
7. $\Delta H = +73 - 74 = -1 \text{ kg/mol}$
8. Conceptual
9. Conceptual
10. Adiabatic irreversible process
 So $n(v(T_2 - T_1)) = -P_{\text{ext}}(V_2 - V_1)$
 So $T_2 = 363.5$
11. Conceptual
12. Conceptual
13. $p^{ka} = -\ln k \quad \& \quad \Delta G^\circ = -RT \ln k$
 So $p^{ka} = \frac{\Delta G^\circ}{RT} = (-\ln k)$
 $\Delta G^\circ = \Delta H^\circ - T \Delta S^\circ$
14. $\Delta G = \Delta H - T \Delta S$
 Non spontaneous $\Delta G > 0$
 $\Delta H - T \Delta S > 0$
 $\Delta H > T \Delta S$
 $T < \frac{\Delta H}{\Delta S}$
 So $T < 7.14$
 $T = 7$ approximately
15. $\Delta G^\circ = \Delta H^\circ - T \Delta S^\circ$
16. $\Delta H^\circ_{\text{solu}} = \Delta H^\circ_{\text{hydration}} \text{ or } \text{NaCl} + \Delta H^\circ \text{L.E}$
17. Conceptual
18. $\Delta U_{A-B} = 600 \quad \Delta U_{B-C} = -40 \quad \Delta U_{A-C} = 560 \text{ kg}$
19. Conceptual
20. Conceptual