Sri Chaitanya IIT Academy, India

A.P, TELANGANA, KARNATAKA, TAMILNADU, MAHARASHTRA, DELHI, RANCHI

A right Choice for the Real Aspirant

ICON CENTRAL OFFICE, MADHAPUR-HYD

Sec: Sr. IPLCO **JEE ADVANCED** **DATE : 06-12-15**
TIME : 3:00 **2013_P1 MODEL** **MAX MARKS : 180**

KEY & SOLUTIONS

PHYSICS

1	**A**	2	**B**	3	**B**	4	**D**	5	**D**	6	**C**
7	**C**	8	**B**	9	**D**	10	**C**	11	**A,B,C,D**	12	**A,C,D**
13	**A,C,D**	14	**A,C,D**	15	**A,C,D**	16	**3**	17	**4**	18	**2**
19	**3**	20	**1**								

CHEMISTRY

21	**D**	22	**C**	23	**A**	24	**A**	25	**B**	26	**A**
27	**D**	28	**C**	29	**B**	30	**B**	31	**AB**	32	**ABC**
33	**D**	34	**BD**	35	**C**	36	**4**	37	**3**	38	**1**
39	**5**	40	**2**								

MATHEMATICS

41	**C**	42	**C**	43	**A**	44	**A**	45	**A**	46	**B**
47	**A**	48	**B**	49	**B**	50	**D**	51	**AD**	52	**ABC**
53	**C**	54	**AB**	55	**AB**	56	**3**	57	**4**	58	**3**
59	**1**	60	**8**								

CHEMISTRY

21. Uncertainty principle lead to probability concept.

22. $\Delta x.\Delta p = \frac{h}{4\pi}$

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

Dividing both sides with 'v'

$\Delta x.\frac{\Delta v}{v} = \frac{h}{4\pi(mv)} = \frac{\lambda}{4\pi}$

In ground state max $\Delta x = 0.53 \times 2 = 1.06A^0$

$1.06 \times \frac{\Delta v}{v} = \frac{3.3}{4\pi}A^0$

$\frac{\Delta v}{v} = \frac{3}{4\pi} \Rightarrow \frac{75}{\pi}$

23. For successive orbits $n_2 - n_1 = 1$

$\therefore (n_2^2 - n_1^2) = (n_2 + n_1)$

24. Loss of mass = 12 – 7.6 = 4.4

$\therefore CaCO_3$ Present = 10gm

$\therefore$ Imparities = 12 – 10 = 2 gm $\Rightarrow 16.6$

25. Milk is an emulsion

26. In '$KHSO_4$' oxygen is oxidised

27. Fact

28. Cu^+ and Cu^+ transfer one mole of electron

29. $6X + 4X \rightarrow 6X^{+2} + 4X^{-3}$

electrons transfered = 12

30. $20 \times N = 20 \times 0.32 \times 5$

N = 1.6 = 0.8M

$\therefore H_2O_2$ decomposed $1 \times 1 - 1 \times 0.8 = 0.2mol$

$\therefore O_2$ Formed 0.1 mol = 3.2gm

31. Facts from Bohr's theory

32. $\left(2-\frac{r}{a}\right)$ decides the facts

As there is no angular part the function is independent on angular parametres

33. To knock out an electron energy of electron must be made zero, in single electron species.

34. $4Mg+10HNO_3 \rightarrow 4Mg(NO_3)_2+NH_4NO_3+3H_2O$ out of '10' HNO_3 moles '9' are providing spectator ions

35. $KE = h\upsilon - h\upsilon_0$

36. Atom – 1 Atom – 2

$4 \rightarrow 3$ $4 \rightarrow 2$ (New)

$3 \rightarrow 2$ $2 \rightarrow 1$(Repeat) $4 \rightarrow 3$

$2 \rightarrow 1$ $3 \rightarrow 1$ (New)

37. He^+ : single electron species

2^{nd} excited state $\Rightarrow$ n = 3

3s, 3p, 3d $\Rightarrow$ 9 states

H^- : multielectron species:

2^{nd} excited state $\Rightarrow$ 2P $\Rightarrow$ 3 state

38. No.of soapions per micell = $\frac{4\times10^{-17}}{1.6\times10^{-19}} = 250$

CMC = 0.004×250 = 1M

39. Stopping potential of electron is numerically equal to KE. (in ev)

KE = 10 – 5 = 5ev

40. $NaH+H_2O \rightarrow NaOH+H_2$

One electron transferred in the reaction