Total No. of Questions : 27]

[Total No. of Printed Pages : 7

XILKGAR21
5602
CHEMISTRY

Time : 2.30 Hours]

[Maximum Marks : 70

(Very-Very Short Answer Type Questions)   1 each

1   How many groups and periods are there in the modern periodic table ?

2.   What is the basis of classification of elements in the long form of the periodic table ?

3.   Define Isolated System.

4.   Which is the most abundant alkaline earth metal ?

5.   What is the general formula of alkynes ?

(Very Short Answer Type Questions)

6. What is the mass of 2 moles of H_2O ?

7. What requirements should a molecule fulfil for the formation of hydrogen bond ?

8. What is 'Buffer Solution' ?

Or

What is 'pH' ?

9. Calculate oxidation number of S in $H_2S_2O_7$ and K in $KMnO_4$.

10. Define Hydrides. Name its *three* types.

11. What do you understand by catenation ?

12. Name full form of BOD and COD.

(Short Answer Type Questions)

13. Define Empirical formula and Molecular formula. What is relationship between them ?

14. Define electron gain enthalpy. Discuss its trend in periodic table.

15 What is Covalent Bond ? Explain with suitable example.

Or

Explain sp^3 hybridisation.

16. Define Boyle's Law. How is it represented Mathematically ?

17. Explain the term Viscosity. What are its units ? What is effect of temperature on it ?

8. State and explain First Law of Thermodynamics.

19. State and explain the 'Law of Chemical Equilibrium'

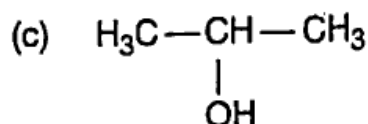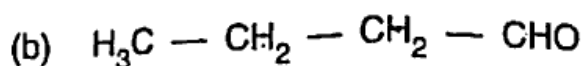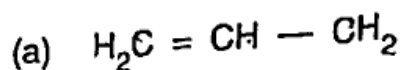20. Name the elements of group 14 with their atomic numbers. Give their electronic configuration.

21. Give IUPAC names of the following compounds :

(a) $H_2C = CH - CH_2$

(b) $H_3C - CH_2 - CH_2 - CHO$

(c) $H_3C - CH - CH_3$
          |
          OH

22. What are Carboanions ? Discuss their various types.

23. Explain electrometric effect with examples.

24. What are necessary conditions for any compound to show aromaticity ?

(Long Answer Type Questions)　　　　5 each

25. Give answer of the following questions in brief :

(i) What is de Broglie equation ?

(ii) Which quantum number determines the size of orbital ?

(iii) What is shape of p-orbital ?

(iv) Write electronic configuration of O^{2-} (at no. 8).

(v) What are values of n and l for $3p$ orbitals ?

Or

Write short notes on the following :

(i) Afbau's principle

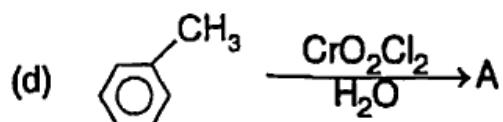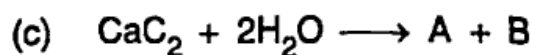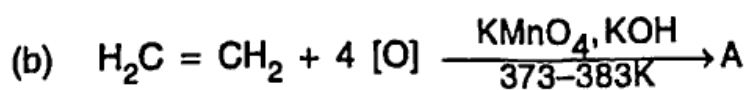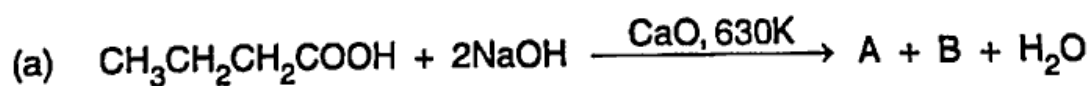(ii) Pauli's exclusion principle

26. Give reason for the following :

(i) Name *two* radioactive elements of s-block elements.

(ii) Why do alkaline earth metals have a greater tendency to form complexes as compared to alkale metal ?

(iii) How does solubility of hydroxides of alkaline earth metal vary ?

(iv) What is slaked lime ?

(v) Which *s*-block element involved in formation of Grignard's reagent ?

Or

What are *s*-block elements ? Discuss the anomalous behaviour of lithium in its group compare the properties of lithium with these of Magnesium.
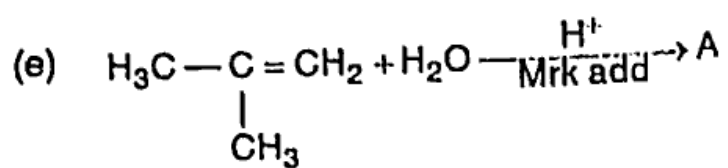
27. Complete the following equations

(a) $CH_3CH_2CH_2COOH + 2NaOH \xrightarrow{CaO, 630K} A + B + H_2O$

(b) $H_2C = CH_2 + 4 [O] \xrightarrow[373-383K]{KMnO_4, KOH} A$

(c) $CaC_2 + 2H_2O \longrightarrow A + B$

(d) $\xrightarrow[H_2O]{CrO_2Cl_2} A$

(e) $H_3C-C=CH_2 + H_2O \xrightarrow[\text{Mrk add}]{H^+} A$
$\quad\quad\quad\quad |$
$\quad\quad\quad CH_3$

Or

What are Arenes ? How are they classified ? Discuss brielfy the isomerism and nomenclature of arenes.