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BET-013

DIPLOMA IN CIVIL ENGINEERING (DCLE(G))/ DIPLOMA IN ELECTRICAL AND MECHANICAL ENGINEERING (DEME) / DCLEVI / DMEVI / DELVI / DECVI / DCSVI / ACCLEVI / ACMEVI / ACELVI / ACECVI / ACCSVI

Term-End Examination

01249

June, 2014

BET-013 : CHEMISTRY

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt **five** questions including Question no. 1 which is compulsory. All questions carry equal marks.*

1. Explain the following :

(a) Glass is a supercooled liquid. *2*

(b) Ionization energy of Be is more than that of B. *2*

(c) Na^+ is smaller than Na. *2*

(d) Ionic compounds do not conduct electricity in solid state. *2*

(e) Cause of periodicity in the properties of elements. *2*

(f) Some important properties of lubricating oil. *4*

2. (a) Describe disadvantages of hard water used in boiler-feed water. *8*

(b) Write down the properties of d-block elements. *6*

3. (a) Write down the necessity of making alloys. *7*

(b) Describe the method to determine the calorific value of a fuel by Bomb calorimeter. *7*

4. (a) Define Monomer. Describe the preparation, properties and uses of P.V.C. and Teflon. *7*

(b) Why does natural rubber need vulcanization ? Explain in brief. *4*

(c) Show that $P^{H} + P^{OH} = 14$. *3*

5. (a) Write down electronic configuration of K_{19}, Cl_{17}, C_6, Ca_{20} and Mg_{12}^{+2}. *5*

(b) Write down the formula of the following compounds : Calcium hydroxide, Sodium carbonate, Ammonium chloride, Potassium ferricyanide and Hydrochloric acid. *5*

(c) Explain Haber Process with equations. *4*

6. Explain the following :

(a) Characteristics of Glasses *6*

(b) Characteristics of an Ideal fuel *6*

(c) Function of catalyst *2*

7. (a) What are ceramics and how are they classified ? 7

(b) Explain the method of Glazing. 7

8. Write short notes on any ***two*** of the following : *2×7=14*

(i) Ion Exchange resin process of softening hard water

(ii) Ionization energy and its variation across the periods and groups

(iii) Biogas

(iv) Viscosity Index