

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

01055 **Term-End Examination**

December, 2014

BET-013 : CHEMISTRY

Time : 2 hours

Maximum Marks : 70

Note : *Question no. 1 is compulsory. Answer any other
four questions. All questions carry equal marks.*

1. (a) Write merits and demerits of Greases. 2
- (b) Which of the following is smallest in size : 2
 Na^+ , O^{2-} , Ne, Mg^{2+}
(Atomic No. of Na = 11, of O = 8, of Ne = 10
and of Mg = 12)
- (c) Complete the following reaction : 2
 $\text{CaCl}_2 + \dots \rightarrow \text{CaCO}_3 + 2 \text{NaCl}$
- (d) What is Aufbau principle ? 2
- (e) Define Catalyst. 2
- (f) Why is Fe^{+2} more electronegative than Fe ? 2
- (g) What are the functions of Alumina in
manufacturing of glass ? 2

2. (a) State Modern Periodic Law. 2
- (b) Write the blocks of the periodic table to which the following elements belong : 2
- (i) Na
- (ii) S
- (iii) Br
- (iv) Co
- (c) Describe the soda-lime process or zeolite process to remove the hardness of water. 10
3. (a) Name any four products obtained from petroleum refining and discuss their uses. 10
- (b) Explain lower and higher calorific value of a fuel. 4
4. (a) Write down the electronic configuration of F_9 , Ca_{20} , Cr_{24} , Cu_{29} . 4
- (b) Give preparation, properties and uses of Brass, Bronze and Duralumin. 6
- (c) Write about glass transition temperature. 4
5. (a) What is polymerization ? Give preparation, properties and uses of Nylon and Neoprene. 6
- (b) Distinguish thermoplastics and thermosetting polymers. 4
- (c) What are ceramics and how are they classified ? 4

6. (a) Name the important method to prevent brittle fracture. 4
- (b) Explain the purpose of Glazing. Write about liquid glazing of ceramics. 6
- (c) Write down any four properties of lubricating oil. 4
7. (a) Explain the merits and demerits of semi-solid lubricants. 4
- (b) Describe in brief methods of prevention of scale formation in a boiler. 8
- (c) Water is a better solvent for ionic compounds. Explain with examples. 2
8. (a) Name any two ores of Aluminium and describe any method of extraction from its ores. 10
- (b) Why do Silicates, Borates and Phosphates have greater tendency to form glass? 4
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