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BET-013

03313

DIPLOMA IN CIVIL ENGINEERING (DCLEC(G))/ DIPLOMA IN MECHANICAL ENGINEERING (DME)

DCLEVI/DMEVI/DELVI/DECVI/DCSVI/ ACCLEVI/ACMEVI/ACELVI/ACECVI/ACCSVI

Term-End Examination

December, 2012

BET-013 : CHEMISTRY

Time : 2 hours *Maximum Marks : 70*

Note : *Question Number **1** is **compulsory**. Answer any other **four** questions from question numbers 2 to 8. All questions carry **equal** marks.*

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1. (a) How many periods are there in a Modern Periodic Table ? And which is the shortest period in the Periodic Table ? 2

(b) Name any four important gases present in dry air. 2

(c) Why does copper turn pale green on long standing ? 2

(d) What is hydrological cycle ? 2

(e) What are fossil fuels and give two examples ? 2

(f) What is Viscosity ? 2

(g) Why glass is called as "Super cooled liquid" ? 2

2. (a) Why a cation is always smaller than its parent atom ? 4

(b) Define Atomic Radius. How it varies down a group and across a period, from left to right ? 6

(c) State any four uses of Hydrogen. 4

3. (a) Explain the process of froth flotation with a neat diagram. 6

(b) Write a short note on the 3 isotopes of Hydrogen. 4

(c) Write any four chlorine containing compounds and their uses. 4

4. (a) Write a note on electrometallurgy of Aluminium, with a diagram. 6

(b) Eventhough iron pyrite is widely available, but is not suitable for iron and steel production why ? 3

(c) Explain about homogeneous and heterogeneous alloys, with examples. Whether intermetallic compounds are heterogeneous or homogeneous alloys ? 5

5. (a) Write a detailed note on boiler corrosion and its prevention. 8

(b) What is pH value ? 2

(c) pOH of a solution is 8. What is its pH ? ($pk_w = 14$) 4

6. (a) Compare the merits and demerits between solid, liquid and gaseous fuels. 8

(b) Write a short note on : 6

(i) LPG

(ii) Natural Gas

(iii) Water Gas

7. (a) Define a Lubricant with any four functions of it. 6

(b) Discuss about Graphite as a Lubricant. 4

(c) Discuss about cloud and pour points. 4

8. (a) Explain the process of free radical polymerisation. 8

(b) What are the main groups of refractories ? 4

(c) What is vulcanisation ? 2