

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

Term-End Examination

June, 2017

00025

BET-013 : CHEMISTRY

Time : 2 hours

Maximum Marks : 70

Note : *Question number 1 is compulsory. Answer any other four questions from questions no. 2 to 8.*

1. (a) State Pauli Exclusion Principle. 2
- (b) Name any two main ores of Iron. 2
- (c) Define Quantum number. 2
- (d) What is Modern Periodic Law ? 2
- (e) Name two important zones of the atmosphere. 2
- (f) Name two solid lubricants. 2
- (g) What is the role of plasticizers in polymerization process ? 2

2. (a) Define Ionization Energy. How does it vary across a period and in groups ? 10
- (b) Why is Na^+ smaller than Na ? 4
3. (a) Describe the Haber Process of manufacturing ammonia (NH_3) with the help of a neat sketch. 10
- (b) Write down the electronic configuration of the following : 4
- (i) K(19)
- (ii) Cr(24)
- (iii) Ca^{+2}
- (iv) Cu(29)
4. (a) Describe Ostwald's Process to synthesize nitric acid with the help of a neat diagram. 10
- (b) Write the important applications of H_2SO_4 . 4
5. (a) What is high carbon steel ? Write its important uses. 4
- (b) How is copper extracted from its ore ? Explain. 10
6. (a) Explain the zeolite process for softening hard water. 6
- (b) What is caustic embrittlement ? 4
- (c) Write the characteristics of a good fuel. 4

7. (a) Explain Vulcanization of rubber. 7
- (b) Differentiate between Thermoplastics and Thermosetting resins. 7
8. Write short notes on any *two* of the following : $2 \times 7 = 14$
- (a) Preparation and uses of chlorine
- (b) Disadvantages of hard water in a boiler
- (c) Refractories
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