Reg. No. | | | | | | | | | | | | |

Question Paper Code : 11270

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Second Semester

Civil Engineering

HS 1153 – ENGINEERING CHEMISTRY – II

(Common to all branches)

(Regulations 2008)

Time : Three Hours **Maximum : 100 Marks**

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Define refractoriness under load ? What is its use ?
2. What are solid lubricants ? Give two examples.
3. Humidity of air is a culprit for corrosion, substantiate.
4. What is electroless plating ?
5. What is vulcanization of rubber ?
6. List out any four differences between addition and condensation polymerization.
7. How is water gas superior to producer gas ?
8. Define the terms cracking and knocking.
9. Comprehend SMILEYS notation.
10. What is the significance of bond characteristics in drug design ?

PART – B (5 × 16 = 80 Marks)

11. (a) (i) What are the characteristics of good lubricants ? Explain the lubrication mechanism. **(8)**

(ii) Describe the manufacture and characteristics of magnesite bricks. **(8)**

OR

(b) (i) Write a note on silicon carbide and boron carbide. **(8)**

(ii) Write briefly on the preparation, properties and uses of zirconia brick. **(8)**

12. (a) What is corrosion ? What are its types ? Briefly explain the mechanism in each case with suitable examples. **(16)**

OR

(b) How is corrosion prevented ? Explain the important methods of corrosion control. **(16)**

13. (a) (i) Discuss the preparation, properties and uses of Teflon and Nylon 6:6. **(8)**

(ii) Explain the process of vulcanization of rubber. What are its advantages ? **(8)**

OR

(b) (i) Discuss the preparation, properties and uses of Bakelite. **(8)**

(ii) Explain injection moulding with a neat diagram. **(8)**

14. (a) Explain the petroleum refinery process in detail with neat sketches. What are the properties and applications of its various fractions ? **(16)**

OR

(b) (i) Describe the Fischer Tropsch method with a neat sketch. **(8)**

(ii) What is producer gas ? What is its composition ? Discuss its method of production. **(8)**

15. (a) (i) Elaborate on the relationship between structural information and the chemical property of molecules. **(8)**

(ii) Define similarity search and sub-structure search. **(8)**

OR

(b) (i) Explain the terms, Canonical structure and structural keys. **(8)**

(ii) Discuss the application of chem.-informatics in drug designing. **(8)**