

24005

B.Tech. 2nd Semester Examination, May-2016

ENGINEERING CHEMISTRY

Paper-CH-101-F

Common for all Branches

Time allowed : 3 hours] [Maximum marks : 100

Note : Attempt five questions in all, selecting at least one question from each section. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) Define the term components and degree of freedom with respect to phase rule.
- (b) What is Eutectic point ?
- (c) Define the term 'autocatalysis'.
- (d) Name the impurities present in natural water.
- (e) What is meant by desalination ?
- (f) What is Pilling-Bedworth rule ?
- (g) Describe biodegradable lubricants.
- (h) Define functionality and degree of polymerisation.
- (i) Why additives are used in lubricants ?
- (j) Give the principle of flame photometry.

2×10=20

Section-A

2. (a) Draw and explain the phase diagram of carbon dioxide system in detail. 10
- (b) Discuss phase diagram of any system having congruent melting point. 10

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3. (a) Describe the role of promoters, poisoners and inhibitors in catalysis. 10
- (b) Discuss the enzymatic catalysis, in brief. 10

Section-B

4. (a) What is scale formation in Boiler ? Explain disadvantages of scale formation and give any two methods of prevention of it. 10
 - (b) Define the term 'alkalinity' of water. Write the procedure for determination of alkalinity of water. 10
5. Write short notes on :
 - (a) Demineralisation of water. 10
 - (b) Break point chlorination. 10

Section-C

6. Write short notes on :
 - (a) Rusting of Iron
 - (b) Galvanic Corrosion
 - (c) Microbial Corrosion
 - (d) Electroplating. 5×4=20
7. (a) What are lubricants ? Discuss the classification of lubricants with examples. 10
- (b) Define the following properties of lubricants and discuss their importance :
 - (i) Flash and Fire points 5
 - (ii) Cloud and Pour points. 5

Section-D

8. (a) Distinguish between :
 - (i) Addition and Condensation polymerisation. 5
 - (ii) Thermoplastic and Thermosetting resins. 5
 - (b) How are the different properties of polymers related to their structure ? 10
9. Write the informative notes on :
 - (a) UV Spectroscopy. 10
 - (b) Differential Thermal Analysis. 10