

- (c) What are the importance of Viscosity in Lubricating Oil ? How Viscosity is determined. 5

SECTION – D

8. (a) Write an essay on "The effect of structure on properties of Polymer". 6
- (b) Write a short note on Vulcanisation of Rubber. 6
- (c) Discuss the Prepration, Properties and application of PVC. 8
9. (a) Write a short note on Application of UV spectroscopy. 10
- (b) Discuss the working and Principle of Differential Thermal Analysis. 10

Roll No.

24005

**B. Tech. 1st Semester (Common
For All Branches)
Examination – December, 2018**

ENGG. CHEMISTRY

Paper : CH-101-F

Time : Three Hours] [Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

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

1. (a) What is Inhibitors ? Give example. $2 \times 10 = 20$
- (b) What is Reduced Phase Rule ?
- (c) What do you mean by Pilling Bedwoth Rule ?
- (d) What do you understand by Tinning ?
- (e) What is Critical Temperature ?

- (f) What is the significance of Flash and Fire point ?
- (g) Define term Tacticity.
- (h) Define Iodine value of a Lubricants ?
- (i) What do you mean by Lambert's Beer Law ?
- (j) Define Coagulation.

SECTION – A

- 2. (a) Draw and explain the Phase diagram of Zn-Mg system in detail. 10
- (b) Define the term Degree of Freedom and Component. Give example. 5
- (c) Eutectic is a mixture not a compound. Explain. 5
- 3. (a) What do you mean by catalyst. Discuss their characteristics. 10
- (b) What are Biocatalyst. Explain the Lock and key mechanism of enzyme action. 10

SECTION – B

- 4. Write short notes on : $5 \times 4 = 20$
- (i) Break point chlorination

- (ii) Mixed bed ionization
- (iii) Reverse osmosis
- (iv) Caustic embrittlement

- 5. (a) What are the functions of lime soda in lime soda process ? 10
- (b) 100ml of an alkaline water sample required 40ml of N/50 H_2SO_4 for Phenolphthalein end-Point and another 10ml for Methyl-orange indicator. Describe the type of alkalinity and calculate in terms of $CaCO_3$ equivalents. 10

SECTION – C

- 6. (a) What are the factors affecting Corrosion ? 10
- (b) Discuss the following term :
 - (i) Microbiological corrosion 5
 - (ii) Sacrificial anodic protection 5
- 7. (a) What are Lubricants ? Discuss the classification of Lubricants with examples. 10
- (b) Define and explain the term emulsion. Why graphite and MoS_2 preferred as solid lubricant. 5