

11503/21503

Roll No. 2

Total No. of Pages 2

11503/21503

B. Tech. I - Sem. Main/Back & II-Sem. Back Exam. March - 2021

BSC

1FY2-03 /2FY2-03 Engineering Chemistry

Time: 3 Hours

Maximum Marks: 100

Min. Passing Marks:

Instructions to Candidates:

Part - A: Short answer questions (up to 25 words, 10) \times 3 marks = 30 marks
All ten questions are compulsory.

Part - B: Analytical/Problem solving questions 5 \times 10 marks = 50 marks
Candidates have to answer five questions out of seven.

Part - C: Descriptive/Analytical/Problem Solving questions 4 \times 20 marks = 80 marks
Candidates have to answer four questions out of five.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. NIL

2. NIL

PART - A

- Q.1 What is carbonate hardness?
- Q.2 Importance of ammonia buffer in EDTA titration.
- Q.3 What is Cetane Number?
- Q.4 What is calorific value?
- Q.5 What are the basic constituents of cement?
- Q.6 Pilling-Bedworth's rule
- Q.7 Viscosity index of lubricating oil
- Q.8 What is Steam Emulsion Number?
- Q.9 Structure and uses of Paracetamol

PART - B

- Q.1 Discuss the problem of scales in boilers.
- Q.2 Significance of proximate analysis of coal
- Q.3 Describe the mechanism of wet corrosion.
- Q.4 Discuss the manufacturing of glass of a hard glass with diagram and reactions.
- Q.5 What are Lubricants? Explain third layer mechanism of lubrication.
- Q.6 Discuss free radical addition in alkanes.
- Q.7 Explain various steps involved in municipal water supply.

PART - C

- Q.1. What is softening of water? Describe lime - soda softening process with diagram and reactions.
- Q.2 What is Coke? Describe the manufacturing of metallurgical coke with diagram and reactions.
- Q.3 (a) Discuss pitting corrosion with suitable example.
(b) Explain the chemistry of setting and hardening of cement.
- Q.4 (a) Describe the synthesis, properties and uses of Aspirin.
(b) Explain the determination viscosity with Redwood Viscometer No.1.
- Q.5 Write short notes on any four of the following -
- (1) Caustic Embrittlement
 - (2) Regeneration zeolite
 - (3) Safety glass
 - (4) Flash and fire point
 - (5) Role of Gypsum
 - (6) Cathodic protection from corrosion

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