[Total No. of Questions - 9] [Total No. of Printed Pages - 3]
(2067)

17003(M)

B. Tech 2nd Semester Examination

Engineering Chemistry (CBS)

CH-101

Time : 3 Hours **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all selecting one question from each section ABCD. Section E is compulsory.

SECTION - A

1. (a) Explain water softening. (3)
   (b) Write note on water quality parameters. (3)
   (c) Why does hard water consumes a lot of soap? (3)
   (d) Explain Total Dissolved Solids. (3)
2. (a) Explain hydrogen-oxygen fuel cells. (4)
   (b) Give the constructional detail of glass electrode. How can this be used for determination of pH of solution? (4)
   (c) Explain concentration cells. (4)

SECTION - B

3. (a) What is corrosion of metals? (3)
   (b) Explain intergranular corrosion. (3)
   (c) Explain stress corrosion. (3)
   (d) Discuss water line corrosion. (3)

4. (a) Explain hyperchromic and hypo chromic effects, red and blue shifts. (4)
   (b) Discuss principle of I.R. spectroscopy. (3)
   (c) Explain various electronic transitions in UV region. (3)
   (d) What is finger print region? (2)

SECTION - C

5. (a) Distinguish between proximate and ultimate analysis of oils. (4)
   (b) Write note on octane number. (3)
   (c) Distinguish between coke and coal. (3)
   (d) Define chemical fuel. (2)
6. (a) Write note on saponification number, iodine value. (4)
   (b) Write short note on solid lubricants. (3)
   (c) Explain neutralization no. (3)
   (d) Explain cloud and pour points. (2)

SECTION - D

7. (a) How will you synthesize Bakelite and Teflon? (4)
   (b) Explain conducting polymers. (3)
   (c) Explain the applications of epoxy resins and PMMA. (3)
   (d) Explain thermoplastic polymers. (2)
8. (a) Give synthesis and applications of polyurethanes. (3)
   (b) Explain biodegradable polymers. (3)

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(c) Give the preparation properties and uses of carbon nanotubes. (3)

(d) Explain structure and uses of graphite. (3)

SECTION - E

9. (a) Explain steam emulsion number. (2)

(b) What is catalytic reforming? (2)

(c) What is passivity? (2)

(d) What is aniline point? (2)

(e) What is zeolites? (2)

(f) Explain specific conductance. (2)