Code: 15A51101 **R15**

B.Tech I Year I Semester (R15) Supplementary Examinations June/July 2019

ENGINEERING CHEMISTRY

(Common to ECE, ME, EIE & IT)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What is hard water? Write its disadvantage.
(b) Define scale and sludge.
(c) Write any two applications of nylons.
(d) Write any two applications of polyaniline.
(e) Define concentration cell corrosion.
(f) What is electroless plating?
(g) Write any two characteristics of solid fuel.
(h) What is power alcohol?
(i) Write classification of refractory.
(j) What are fullerenes?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 (a) Write about caustic embrittlement and boiler corrosion.
(b) Explain about demineralization of brackish water by electrodialysis.

OR

3 (a) How do you estimate alkalinity in water?
(b) Describe briefly about phosphate and carbonate treatment.

UNIT – II

4 Write the preparation and properties of Bakelite and Teflon.

OR

5 Write the preparation and properties of Buna-S and Buna-N.

UNIT – III

6 (a) Explain the construction and electrode reactions takes place in lead – acid battery.
(b) Explain about the corrosion inhibitors.

OR

7 How do you prevent corrosion by cathodic protection method and electroplating method? Give suitable examples.

UNIT – IV

8 (a) Explain about ultimate analysis of coal.
(b) Write about flue gas analysis by Orsat's apparatus.

OR

9 (a) How do you prepare synthetic petrol by Bergius process?
(b) Explain about octane and cetane number.

UNIT – V

10 (a) Write the composition and wet process preparation of cement.
(b) Write notes on carbon nanotubes.

OR

11 (a) Explain thin and thick film theory of lubrication.
(b) What are carbon clusters? Give an example.

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