

July-22-00214**B. Tech. EXAMINATION, 2022**

Semester II (CBCS)

ENGINEERING CHEMISTRY

CH-101

*Time : 3 Hours**Maximum 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 Sections A, B, C and D. Q. No. 9 is compulsory.

Section A

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|--------|------------------------------------|---|
| 1. (a) | Explain Water Softening. | 2 |
| (b) | Explain Total Dissolved Solids. | 2 |
| (c) | How hardness of water is removed ? | 3 |
| (d) | Explain BOD and COD in detail. | 3 |

2. (a) Explain Calomel electrode. 5
 (b) Explain Hydrogen-Oxygen fuel cell. 5

Section B

3. (a) Explain electrochemical theory of corrosion in detail. 6
 (b) Explain factors affecting corrosion. 2
 (c) Explain Pitting corrosion. 2
4. (a) Explain type of electronic transitions. 4
 (b) Differentiate between UV and IR spectroscopy. 2
 (c) Explain XRD. 4

Section C

5. (a) Explain Cracking and Reforming. 3
 (b) Differentiate Cetane number and Octane number. 3
 (c) Explain different types of fuel. 4
6. (a) Explain properties of Lubricants. 5
 (b) Explain types and selection of Lubricants. 5

Section D

7. (a) How will you synthesise polyurethane and polythene ? 4
 (b) Explain Conducting polymers. 2
 (c) Write down applications of Teflon and Bakelite. 2
 (d) Explain Elastomers. 2
8. (a) Explain Graphene and Graphite. 5
 (b) Explain Carbonnano-tubes. 5

(Compulsory Question)

9. (a) Explain Glass Electrodes.
 (b) Explain Stress corrosion and Natural rubber.
 (c) Explain chemical fuels and clean fuel.
 (d) What is fingerprint region ?
 (e) Write applications of Polystyrene and PMMA.

5×4=20