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CY-1844

B. Tech. (First Semester)

EXAMINATION, 2020

CHEMISTRY

Time : Three Hours

Maximum Marks : 100

Note : Attempt questions from both Sections as directed.

Section—A

(Short Answer Type Questions)

Note : Attempt any *ten* questions. Each question carries 4 marks. $10 \times 4 = 40$

1. Discuss about the seven segment cell.
2. Explain briefly the band theory.

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3. Why the density of water occurs maximum at 4°C ?
4. Define the pseudo order and fractional order reactions with suitable example.
5. Discuss about the Zeta potential.
6. Explain the calomel electrode.
7. Why is propene polar in nature ?
8. Explain the structure of carbonium ion and free radical.
9. Explain the conformation with example of ethane.
10. What is unique about Ziegler-Natta catalyst ?
11. What is Wilkinson catalyst ? Write its applications.
12. Discuss about preparation and conducting nature of polypyrrole.
13. What is the importance of "fingerprint region" in infrared spectroscopy ?

14. Explain Calgon treatment prevents scale formation in boiler.
15. Define the high and low calorific values.
16. What do you understand by titrimetric analysis ?

Section—B

(Long Answer Type Questions)

Note : Attempt any *three* questions. Each question carries 20 marks. $3 \times 20 = 60$

1. (a) Explain the X-ray crystallography.
(b) Write the Ostwald's isolation method.
2. (a) Explain the phase diagram of water.
(b) Discuss the factors affecting the corrosion.
3. (a) Write the mechanism of aldol condensation.
(b) Explain the E-Z nomenclature.

4. (a) Explain in detail about the biopolymers.
(b) Write uses of organoaluminium compounds.
5. (a) Write the applications of infrared spectroscopy.
(b) Explain the Zeolite process.
6. (a) What is biogas ? Discuss its advantages.
(b) What is boiler feed water ?