

Bachelor of Science (B.Sc.) Semester–I Examination
INDUSTRIAL CHEMISTRY (ICH–102)
Optional Paper–2

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) All the **five** questions are compulsory and carry equal marks.

(2) Draw diagrams and write equations wherever necessary.

1. (A) What are emulsions ? How are they classified ? Explain any one with suitable example. 5
- (B) Explain the terms with suitable examples :
 - (1) Gel
 - (2) Aerosol. 5

OR

- (C) Write a note on surfactant. 2½
- (D) Give the comparison between physisorption and chemisorptions. 2½
- (E) Give the mechanism of micelles formation. 2½
- (F) Explain Freundlich adsorption isotherms. 2½
2. (A) How will you determine the calorific value of fuel experimentally by using Bomb Calorimeter ? 5
- (B) Give the comparison between solid, liquid and gases fuel. 5

OR

- (C) Describe in short different types of coal. 2½
- (D) Briefly explain the important characteristics of a good fuel. 2½
- (E) Describe the proximate and ultimate analysis of coal. 2½
- (F) Give the advantages and disadvantages of gas fuel. 2½
3. (A) Discuss importance of homogeneous catalysis in industries. 5
- (B) Explain enzyme catalysis with examples. 5

OR

- (C) What is negative catalyst ? Explain with examples. 2½
- (D) Discuss in short phase transfer catalyst with example. 2½
- (E) Why catalysis is important ? 2½
- (F) What is shape selective catalysis ? 2½
4. (A) Discuss the effect of air pollution on humans, plants and animals. 5
- (B) What is Green House Effect ? Explain. 5

OR

- (C) What are Foul Smelling Gases ? Explain with examples. 2½
- (D) Explain in short global warming. 2½
- (E) What are secondary pollutants ? Explain any two examples of it. 2½
- (F) Write in short sources of air pollution. 2½

5. Attempt any **TEN** of the following :

- (i) What is Demulsification ?
- (ii) Give two names of demulsifiers.
- (iii) Give any two examples of sol.
- (iv) Define fuel.
- (v) What are various units of calorific value ?
- (vi) What is CNG ?
- (vii) What is acid catalyst ?
- (viii) Give any two factors that affect the performance of catalysis.
- (ix) What is base catalyst ?
- (x) Give any two examples of primary pollutants.
- (xi) What are CFCs ?
- (xii) What is PAN ?

10×1=10