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ICE 459

II Semester M.Sc. Degree Examination, May/June 2019

(CBCS)

INDUSTRIAL CHEMISTRY

**Industrial Safety, Environmental And Electrochemical Sciences
(Open Elective)**

Time : 3 Hours]

[Max. Marks : 70

Instructions :

1. Answer **any five** questions from Part A and **any five** questions from Part B.
2. Figures to the right indicate marks.

PART - A

1. Answer **any five** sub-divisions : **(5 × 2 = 10)**
 - (a) Explain the theory of electroplating with a suitable example.
 - (b) How corrosion can be controlled by the design improvement? Explain.
 - (c) Write a short note on geothermal energy.
 - (d) Define reverse osmosis. Write its significance in the desalination process.
 - (e) What is Agmark? Write its importance.
 - (f) Explain the terms quality assurance and quality acceptance.
 - (g) Explain, why tears gas effect is less on animals.
 - (h) What is OHSAS 18000? Write its implications.

PART - B

Answer **any five** questions : **(5 × 12 = 60)**

2.
 - (a) Describe the safety rules in the transportation and storage of chemicals.
 - (b) Describe the classification of chemical weapons and discuss their mode of functioning. **(6 + 6)**



3. (a) Name any four chemical warfare agents. Discuss their adverse effects on mankind.
(b) State and describe the international laws on chemical weapons. **(6 + 6)**
4. (a) What is industrial hygiene? How the identification, evaluation and control of industrial hazard is done?
(b) What are the current trends in quality control? **(8 + 4)**
5. (a) Describe the different types of qualities. Differentiate between quality control and inspection.
(b) Explain the basic concepts of quality assurance and quality improvements. **(6 + 6)**
6. (a) Write a note on Bhopal gas tragedy.
(b) Describe the construction and working of H₂-O₂ alkaline fuel cell. **(6 + 6)**
7. (a) What is greenhouse effect? How it can be controlled? Write any four adverse effects of acid rain.
(b) What are the standards for drinking water? How the fluoride content of water is determined? **(6 + 6)**
8. (a) Describe the corrosion control by anodic protection method. Write its demerits over the cathodic protection.
(b) Explain the electroless plating of copper.
(c) Distinguish between galvanizing and tinning. **(6 + 3 + 3)**
9. (a) Describe the mechanism of rusting of iron.
(b) What are the requirements of a good paint? Write constituents of paints and their functions.
(c) Describe the role of electrochemistry in the transport system. **(4 + 4 + 4)**
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