



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Eighth Semester, B.E. - Semester End Examination; July - 2021

Industrial Chemistry

Time: 3 hrs

Max. Marks: 100

Note: Answer any FIVE full questions.

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| 1 | a. Describe the hot lime-Soda process of softening of hard water. | 7 |
| | b. What is desalination? Explain the desalination of sea water by electro-dialysis. | 7 |
| | c. Discuss the determination of dissolved oxygen by Winkler's method. | 6 |
| 2 | a. What is Sewage? Illustrate sewage treatment of waste water. | 7 |
| | b. Define COD and BOD. Describe the determination of COD of industrial waste water. | 7 |
| | c. Explain the ion exchange process of softening of hard water. | 6 |
| 3 | a. Illustrate the production and applications of O ₂ . | 7 |
| | b. Explain the characteristics and applications of electrical and thermal insulators. | 7 |
| | c. What is lubricant? Mention important functions of lubricant. | 6 |
| 4 | a. Describe the productions and applications of acetylene and Noble gases. | 7 |
| | b. Explain the following terms:
Viscosity of lubricant, Pour point, Cloud point, Oiliness and Coke point. | 7 |
| | c. What are Dielectrics? Illustrate the characteristics and applications of sound insulator. | 6 |
| 5 | a. Discuss the physical and chemical properties of glass. | 7 |
| | b. Explain the manufacture and applications of earthen and sanitary waves. | 7 |
| | c. Describe the raw materials and manufacture of cement. | 6 |
| 6 | a. What are ceramics? Give the classification and general properties of ceramics. | 7 |
| | b. Discuss the raw materials and characteristics of glass. | 7 |
| | c. Explain the following properties of cement:
i) Quality
ii) Shrinkage
iii) Soundness | 6 |
| 7 | a. What are colloids? Explain the electrical properties of colloids. | 7 |
| | b. Describe the purification of colloidal solution by dialysis. | 7 |
| | c. Explain the industrial applications of colloids. | 6 |
| 8 | a. Discuss the constituents and manufacture of paints. | 7 |
| | b. Illustrate the manufacture of emulsion paints and mention advantages of emulsion paints. | 7 |
| | c. Explain the solvents and thinners. | 6 |

- 9 a. What is Pollution? Mention sources and ill effects of CO₂ and acid rain. 7
- b. Describe the aerosols and photo chemical smog. 7
- c. Explain the cause of depletion of ozone layer and give its ill effects. 6
- 10 a. What are particulate matter ? Mention sources and ill effects of dust, smoke, smog and asbestos. 7
- b. Describe the manufacture of following:
- i) Safety matches
 - ii) Wax candles 7
 - iii) Plaster of Paris
 - iv) Tooth paste
- c. Briefly explain soil pollution. 6

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