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Question Paper Code: 53901

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Third Semester

Chemical Engineering

15UCH301 - INTRODUCTION TO CHEMICAL ENGINEERING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL questions

PART A - (10 x 1 = 10 Marks)

- Who is regarded as Father of Modern Chemistry CO1- R
(a) Rutherford (b) Einstein (c) Lavoisier (d) C.V.Raman
- With increase in temperature, viscosity of a liquid CO1- R
(a) Decreases (b) Increases (c) Remains constant (d) May increase or Decrease
- The gas constant (R) is equal to the _____ of two specific heats. CO2- U
(a) Product (b) Difference (c) Sum (d) Ratio
- The substance which alters the rate of chemical reaction and remains unchanged is CO2- U
(a) Reactant (b) Product (c) Catalyst (d) Inhibitor
- Statement 1: Evaporation is considered a mass and heat transfer operation. CO3- U
Statement 2: After evaporation, solids are left behind.
(a) True, False (b) True, True (c) False, False (d) False, True
- Sulfuric acid is manufactured with help of CO3- R
(a) Haber process (b) Contact Process (c) Complex reaction (d) Redox Reaction
- The software CFD stands for CO4- R
(a) Computational Fluid Dynamics (b) Chemical Fluid Design
(c) Chemical Fluid Dynamics (d) None of the above

8. The science which deals with the path of the food CO4- R
 (a) Food Science (b) Nutrition (c) Food Processing (d) Food Technology
9. Methanol decomposes to form hydrogen and which is the other product? CO5- R
 (a) Carbon monoxide (b) Carbondioxide (c) Carbon (d) All of the above
10. Oxidation of natural gas produce what? CO5- R
 (a) Formaldehyde (b) Acetaldehyde (c) Methanol (d) All of the above

PART – B (5 x 2= 10 Marks)

11. List out few achievements of Chemical Engineering CO1- R
12. What is feed forward and feed backward control? CO2- R
13. Distinguish unit operations and unit process. CO3- R
14. Define the term Simulator. List out any two. CO4- R
15. Differentiate Traditional Vs modern Chemical Engineering CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Discuss the role of chemical engineers in process industries . CO1- U (16)
 Or
 (b) Explain in detail about block diagrams and flow charts for various operations. CO1- U (16)
17. (a) What are the components of chemical engineering and Briefly explain each component with suitable examples. CO2- U (16)
 Or
 (b) (i) What is meant by dimensional analysis? State and explain Buckingham PI theorem. CO2- U (8)
 (ii) Differentiate between Newtonian and non Newtonian fluids? CO2- U (8)
18. (a) Explain in detail about the manufacture of sulphuric acid. CO3- U (16)
 Or
 (b) Explain in detail about the manufacture of Soda Ash. CO3- U (16)

19. (a) Elaborate the Role of Computer and Software in Chemical Engineering. CO4- U (16)

Or

(b) What are Chemical reactors? Explain in detail about different types of reactors used in chemical industry. CO4- U (16)

20. (a) Elaborate in detail about Paradigm Shift in Chemical Engineering CO5- U (16)

Or

(b) Explain in detail about Future Scope of Chemical Engineers and Chemical Engineering? CO5- U (16)

