

Register No: .....

Name: .....

**SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)**

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

**SIXTH SEMESTER B.TECH DEGREE EXAMINATION(R,S), MAY 2024****Chemical Engineering  
(2020 SCHEME)****Course Code : 20CHT306****Course Name : Chemical Technology****Max. Marks : 100****Duration:3 Hours****PART A***(Answer all questions. Each question carries 3 marks)*

1. Differentiate between single super phosphates and triple super phosphates.
2. What are the major engineering problems encountered during the manufacture of phosphoric acid by electric furnace method?
3. Compare the use of vanadium pentoxide and platinum as catalysts in the manufacture of sulphuric acid.
4. What are the primary and secondary macronutrients required for plant growth? Mention their significance.
5. Compare paint and varnishes .
6. What are lacquers? Explain the different types of lacquers.
7. Explain the classification of pesticides with suitable examples.
8. What are refractories? Explain the characteristics and classification of refractories.
9. What are the two types of alcoholic beverages? Give examples.
10. Explain any two applications of biotechnology in agriculture.

**PART B***(Answer one full question from each module, each question carries 14 marks)***MODULE I**

11. With neat sketches explain the manufacturing processes of any two fuel gases. Write the necessary reactions involved. 14

**OR**

12. Explain the manufacturing process of oxygen and nitrogen using neat flowsheets. List the end uses of oxygen and nitrogen as industrial gases. 14

**MODULE II**

13. With a neat flowsheet explain the manufacturing of caustic soda. Compare the different types of cells used in the process. 14

**OR**

14. Explain the manufacturing process of calcium phosphate with a neat sketch. And also mention the different grades of calcium phosphate. 14

**MODULE III**

15. Explain the properties, manufacturing process and uses of : 14  
i) Carbon black.  
ii) Activated carbon.

**OR**

16. Explain the process of cement manufacturing highlighting the key stages and the chemical reactions involved in each stage. 14

**MODULE IV**

17. a) What are the raw materials used in the manufacture of glass? Explain the process of glass manufacturing with the necessary reactions involved. 7  
b) Describe the different types of glasses and its applications. 7

**OR**

18. Explain the manufacturing of soap and glycerine with a neat flowsheet. Write the reactions for the chemical synthesis of glycerine. 14

**MODULE V**

19. a) With a neat sketch explain the manufacture of raw sugar from sugarcane. 10  
b) What are the byproducts in sugar manufacture? 4

**OR**

20. Explain the manufacture of leather by chrome tanning and vegetable tanning processes with neat flowsheets. . 14

\*\*\*\*\*