

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SIXTH SEMESTER B.TECH DEGREE EXAMINATION (S), AUGUST 2023

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. Mention the advantages and disadvantages of V_2O_5 and platinum catalyst.
2. List the methods of production of phosphoric acid and mention its advantages.
3. Write the reaction for the production of bleaching powder and write any two uses.
4. Explain the major components present in fertilizers.
5. Write the reactions occurring in cement kiln.
6. Classify different types of pigments used in surface coating formulations.
7. Mention the chemical composition of different types of glass.
8. List out different types of refractories with its composition.
9. Classify the oils based on their iodine value.
10. Enumerate the environment problems faced by sugar industries.

PART B

(Answer one full question from each module, each question carries 14marks)

MODULE I

11. Explain the manufacture of sulfuric acid by contact process with a neat process flow sheet and list out the major engineering problems encountered. (14)

OR

12. Draw a neat process flow sheet for the production of triple super phosphate. (14)
Explain the major engineering problems involved with the process.

MODULE II

13. With a neat flow sheet explain the production of chlorine and caustic soda (14)
using electrolytic process. Write the reactions using mercury cell, diaphragm cell and membrane cell.

OR

14. With a neat process flow sheet explain the manufacture of nitric acid and (14)
write the major engineering problems encountered.

MODULE III

15. Discuss the manufacturing process of Portland cement with a neat process flow sheet, and mention the major engineering problems involved. (14)

OR

16. Explain the manufacture of Titanium dioxide with a neat flow sheet. Write the production and consumption pattern in India. (14)

MODULE IV

17. List and explain the various steps involved in the manufacture of glass. Explain the working of Tank furnace with a neat sketch. (14)

OR

18. Differentiate soaps and detergents and elaborate the manufacture of soap with a neat process flow sheet. (14)

MODULE V

19. (a) Explain different methods used for the extraction of vegetable oil. (6)
(b) Discuss the hydrogenation of vegetable oil with a neat flow sheet. (8)

OR

20. Explain the manufacture of white sugar with a neat process flow diagram. Write down the major engineering problems associated with this process. (14)
