

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020****Subject Code:3140508****Date:17/02/2021****Subject Name:Unit Processes & Chemical Technology****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What are antibiotics? Give two examples. **03**
(b) Discuss the classification of dyes in detail. **04**
(c) With a neat process flow diagram, describe the process of manufacturing of sugar. **07**
- Q.2** (a) State the uses and applications of urea. **03**
(b) With a suitable illustration, explain cracking. **04**
(c) Describe the production of nitrobenzene by nitration of benzene with a neat process flow diagram. Also discuss the mechanism of reaction. **07**
- Q.3** (a) What are vitamins? State their importance. **03**
(b) Briefly explain the classification of drugs and pharmaceuticals. **04**
(c) With a neat process flow diagram, describe the process of manufacturing of penicillin. **07**
- Q.4** (a) Define PVC of paints. What is its significance? **03**
(b) Briefly describe the manufacturing of paper. **04**
(c) Describe the pulp manufacturing by Kraft process. Also explain how it is different from sulfite process. **07**
- Q.5** (a) What do you understand by C1, C2 and C3 chemicals? Explain. **03**
(b) Briefly discuss about the important properties of petroleum products. **04**
(c) Write short notes on processing of petroleum and treatment techniques. **07**
- Q.6** (a) What is refractory? State its types. **03**
(b) Briefly explain the settling and hardening of cement. **04**
(c) With a neat schematic diagram, explain the manufacturing of cement by wet process. **07**
- Q.7** (a) State the advantages of membrane cell over mercury cell. **03**
(b) Briefly describe the manufacturing of sodium bicarbonate. **04**
(c) With a neat process flow diagram, describe the manufacture of caustic soda and chlorine by membrane cell process. **07**
- Q.8** (a) What is absolute alcohol? State the uses of industrial alcohol. **03**
(b) Briefly explain the manufacture of citric acid by fermentation process. **04**
(c) Write short notes on varnishes and industrial coatings. **07**
