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## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI • EXAMINATION - SUMMER • 2015** 

Subject code: 160502 Date: 04/05/2015 **Subject Name: Chemical Process Industries - II** Time: 10.30AM-01.00PM Total Marks: 70 **Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. **Q.1** Answer the following: 14 (i) What are the basic requirements of good fermentation process? (ii) What are antibiotics? Define varnish and state its types. (iii) What are the basic raw materials required for the manufacture (iv) of paints? With illustration, explain leuco compounds. (v) What do you understand by denatured alcohol? (vi) What is inversion of sugar? How can it be prevented? (vii) What is dye? With illustrations, give detailed classification of dyes 07 0.2 according to chemical constitution and application. (b) Stating the major engineering problems, explain the manufacture of sugar 07 from sugarcane with a neat process flow diagram. (b) Write a note on different types of pigments used in surface coatings. Also 07 state the use of each type. Q.3 (a) What are vat dyes? Describe the manufacture of simple vat dyes with a neat 07 flow diagram. (b) Explain in detail the process of manufacturing of pure aniline from 07 nitrobenzene with a neat flow diagram. (a) Draw the flow chart for the production of indigo dye and explain the 07 0.3 process in detail. (b) Describe the manufacturing process for the production of chrome blue 07 black U with a neat flow chart. **Q.4** (a) Draw the general structure of penicillins. Describe the process of 07 manufacturing of penicillins in detail. (b) What is the use of aspirin? With a neat process flow diagram, explain the 07

OR

Q.4 (a) What is the function of insulin? Describe the process of manufacturing of 07 insulin in detail.

process of manufacture of aspirin.

- Q.4 (b) Write a note on vitamins.
- Q.5 (a) Giving the principal reactions in alcohol fermentation, describe the 07 production of industrial alcohol in detail.

(b) What is absolute alcohol? Explain the process of dehydration of ethanol to 07 absolute alcohol by azeotrope distillation.

## OR

Q.5 (a) Write a short note on beers, wines and liquors.

- 07
- (b) What is the major use of citric acid? Describe the process of manufacture 07 of citric acid from crude sugar.

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