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## GUJARAT TECHNOLOGICAL UNIVERSITY M.E. SEMESTER II EXAMINATION – SUMMER 2017

Date:26/05/2017

Subject Code: 2724601

**Subject Name: Facility Planning and Design** Time: 02:30 PM to 05:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Figures to the right indicate full marks. 3. Draw neat sketches wherever required to justify the answer. **Q.1** (a) Explain the importance of facility planning and design in any type of industry? 07 (b) Discuss the different types of plant layout followed in industries with neat sketches in 07 detail. **Q.2** (a) List and explain the factors to be considered for Plant location selection and its **07** analysis. **(b)** Explain the Multiple facility location problems. **07 (b)** Explain the Gravity facility location problem. 07 **Q.3** (a) Write a detailed note on: Production flow analysis (PFA). 07 **(b)** Write a detailed note on: Employee Services-Space requirements. 07 Q.3 (a) Discuss the assembly line balancing problems faced by machine tools, automobile and oil engine manufacturing company. Give your suggestions to eliminate such problems. (b) Discuss the auxiliary services requirement space in warehousing and maintenance 07 and tool room **Q.4** (a) Discuss the facility design procedure. 07 Explain the importance of activity relationship analysis. Also explain the activity 07 **(b)** relationship diagram, OR You are appointed as a senior facility design engineer in a multinational machine 07 O.4 (a) tools/automobile company. It is required to improve and develop the existing facility design. How will you carry out the work assign to you considering manpower and machinery requirements and other factors? (b) Write a detailed note on: Quantitative analysis in cellular manufacturing. 07 Q.5 (a) Write a detailed note on: Plant layout and materials handling. 07 (b) Explain the computer integrated material handling system. 07 OR Q.5 (a) Explain the principles of material handling. Also give the cost justification for the use 07 of material handling. (b) How will you plan for type of material handling equipments in stores and assembly 07 shop in industries? Explain this in detail.

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