Seat No.:	Enrolment No

GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – III • EXAMINATION – WINTER • 2013

Subject code: 732801 Date: 26-11-2013 **Subject Name: Flexible Manufacturing System** Time: 10.30 am - 01.00 pm**Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 (a) What is need of Production flow chart in Production flow analysis? Which are 07 the strengths and weaknesses of PFA. (b) What is polycode & monocode?. OPITZ coding system uses which kind of 07 code. Explain OPITZ coding system in detail **Q.2** (a) How computer is useful in route sheet design? Discuss advantages & 07 disadvantages of computer aided Process Planning. (b) What is cellular manufacturing? Is it a part of Group Technology? Explain all types of designs in cellular manufacturing. (b) Explain various part classification and coding methods. Discuss merits & 07 demerits of each. **Q.3** (a) FMS is suitable in which kind of production system. Discuss the basic 07 components of FMS. (b) How AGVs are useful in material handing in small scale industry? Classify AGVs based on its work volume. Which are best suitable AGVs for small scale industry? Q.3 (a) Why automation in material handing is required? Can conveyor belt replace robots in work space? Elaborate all types of conveyor belts with its salient **(b)** What is Composite part concept? Why it is necessary for Group Technology? 07 **Q.4** (a) What is the use of Kermit protocol in manufacturing? Explain advantage & 07 disadvantage of it. (b) What is the role of communication in automation? Discuss various 07 communication standards in detail. OR **Q.4** 07 (a) How inventory is saved by automated storage & retrieval system? Why it is the essential component of FMS. 0.4 How PLC is useful in manufacturing? Explain working of Timer and Counter. 07 Q.5 What is Vehicle guidance technology? Describe salient features of all types. **07** (a) **(b)** What is the need of VARIANT CAPP? Explain flow diagram to implement it. 07 0.5 (a) How DBMS is helpful in FMS? Discuss role of Information Technology in 07 Manufacturing. 07 **(b)** What is part programming? Explain Canned cycle for drilling operation.
