

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.

- Q.1** (a) What is need of Production flow chart in Production flow analysis? Which are the strengths and weaknesses of PFA. 07
- (b) What is polycode & monocode?. OPITZ coding system uses which kind of code. Explain OPITZ coding system in detail 07

- Q.2** (a) How computer is useful in route sheet design? Discuss advantages & disadvantages of computer aided Process Planning. 07
- (b) What is cellular manufacturing? Is it a part of Group Technology? Explain all types of designs in cellular manufacturing. 07

OR

- (b) Explain various part classification and coding methods. Discuss merits & demerits of each. 07
- Q.3** (a) FMS is suitable in which kind of production system. Discuss the basic components of FMS. 07
- (b) How AGVs are useful in material handling in small scale industry? Classify AGVs based on its work volume. Which are best suitable AGVs for small scale industry? 07

OR

- Q.3** (a) Why automation in material handling is required? Can conveyor belt replace robots in work space? Elaborate all types of conveyor belts with its salient feature. 07
- (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 & disadvantage of it. 07
- (b) What is the role of communication in automation? Discuss various communication standards in detail. 07

OR

- Q.4** (a) How inventory is saved by automated storage & retrieval system? Why it is the essential component of FMS. 07
- Q.4** (b) How PLC is useful in manufacturing? Explain working of Timer and Counter. 07
- Q.5** (a) What is Vehicle guidance technology? Describe salient features of all types. 07
- (b) What is the need of VARIANT CAPP? Explain flow diagram to implement it. 07
- OR**
- Q.5** (a) How DBMS is helpful in FMS? Discuss role of Information Technology in Manufacturing. 07
- (b) What is part programming? Explain Canned cycle for drilling operation. 07
