M.E. First Semester (Mechanical Engineering) (CAD / CAM) (F.T.) (CBS)

# 13484 : Computer Assisted Production Management : 1 MCC 03

P. Pages : 2 **AU - 3290**

Time : Three Hours Max. Marks : 80

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Notes : 1. Answer **three** question from Section A and **three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Illustrate your answer necessary with the help of neat sketches.
5. Use of pen Blue/Black ink/refill only for writing the answer book.

## SECTION – A

| | | | |
|---|---|---|---|
| **1.** | a) | What is CAPP? Explain briefly various types of CAPP. | **8** |
| | b) | State and explain benefits of CAPP. | **5** |
| **2.** | a) | Define capacity planning. Discuss the various factors influencing effective capacity. | **8** |
| | b) | Capacity requirement can be evaluated from two extreme perspectives, "short term and long term", explain in detail. | **6** |
| **3.** | a) | Explain the construction of various types of CMM used in measurement. | **7** |
| | b) | Classify the sensors used in automated inspection. | **6** |
| **4.** | a) | Describe the feature of flexible inspection system. | **7** |
| | b) | Discuss the various software of post inspection used in CMM. | **6** |
| **5.** | | Discuss the following functions of machine vision operation :<br>i) Image acquisition & digitization.<br>ii) Image processing & analysis.<br>iii) Interpretation. | **13** |

## SECTION – B

| | | | |
|---|---|---|---|
| **6.** | a) | JIT is a philosophy who's aim is to eliminate waste, "Analyse this statement with respect to Shingo's seven waste. | **10** |
| | b) | What are the corner stones of Japanese manufacturing system according to Prof. Robert Hall. | **4** |
| **7.** | a) | State and explain MRP system components. | **7** |
| | b) | State what role preventive maintenance plays in JIT. | **6** |
| **8.** | a) | What is KANBAN? Explain the concept of 'single card KANBAN' and 'two card KANBAN'. | **7** |

b) Which type of workplace layout is more suitable in pull system? 6

9. Explain : 13
i) Computer Aided Inventory management.
ii) Computer Integrated material management.

10. a) In a shop the demand for a product has the following probability distribution. 8

| Daily Demand | Probability |
|---|---|
| 0 | 0.05 |
| 10 | 0.25 |
| 20 | 0.35 |
| 30 | 0.20 |
| 40 | 0.05 |
| 50 | 0.10 |

Using the above data simulate the demand for 10 days. and also find average demand. The random numbers are 36, 25, 90, 14, 81, 11, 53, 60, 48, 77.

b) Compare the gross & net requirements. 5

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