

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

00053

Term-End Examination

June, 2018

BME-011 : COMPUTER AIDED PROCESS PLANNING

Time : 3 hours

Maximum Marks : 70

*Note : Attempt any **five** questions. Assume any data, if missing/required. Use of scientific calculator is permitted.*

1. (a) Describe the role of computer in production planning with suitable block diagram. 7
- (b) Briefly discuss the various approaches available for Computer Aided Process Planning. 7
2. (a) Describe the generative system of CAPP. How is expert system (or) knowledge based system used to enhance the capability of this system ? 7
- (b) What is a pocket, with respect to process planning ? Explain a simple method that can be used for pocket identification. 7

3. (a) Discuss the factors influencing the cutting tool selection. 7
- (b) A tool cutting at 24 m/min gave a life of 1 hour when operating on roughness cuts with mild steel. What will its probable life be when engaged on light finishing cuts ? (Take $n = 1/8$ for roughing and $n = 1/10$ for finishing) 7
4. (a) Compare the relative merits and demerits of unilateral and bilateral tolerances with suitable applications. 7
- (b) Describe the data base system for machinability and part print analysis with suitable block diagram. 7
5. (a) Distinguish clearly between drop forging and press forging process with reference to the process and products obtained. 7
- (b) Explain the use of break-even analysis in machine selection with suitable examples. 7
6. (a) Explain the relationship between the machining cost and cutting speed in turning operation using a neat graph. 7
- (b) What are inputs and outputs of a CAPP system for machined parts ? Explain with the help of input and output diagrams. 7

7. (a) How do you decide that a process is under control or out of control using control charts? Explain with suitable examples. 7

(b) What do you mean by process capability? How do you calculate the process capability index? 7

8. Write short notes on the following : $4 \times 3 \frac{1}{2} = 14$

- (a) Product flow analysis
 - (b) Material requirement planning
 - (c) Group technology
 - (d) Statistical process control
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