

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

Term-End Examination

December, 2015

BME-011 : COMPUTER AIDED PROCESS PLANNING

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions. All questions carry equal marks. Assume any data if missing / required. Use of scientific calculator is allowed.

1. (a) Describe in brief the various steps in process planning. 5
- (b) Discuss the benefits of CAPP. 5
2. (a) Briefly explain the five stages in computer aided process planning. 5
- (b) Explain the concept of operation planning and its types. 5

3. (a) Explain the guidelines for selecting surfaces for holding the workpiece. 5
- (b) Discuss about the role of specifications on the part print. 5
4. (a) Briefly explain the various steps involved in the selection of tools during process planning. 5
- (b) Write notes on the following :
- (i) General descriptions of the part
- (ii) General configuration of the part 5
5. (a) Define the various tool angles in turning tool. 5
- (b) Calculate the spindle speed (N) if a C 40 steel job of 80 mm diameter is to be turned by
- (i) HSS tool
- (ii) Carbide tool
- Given values for cutting speed of C 40 steel
- I. HSS tool is 30 m/min
- II. Carbide tool is 145 m/min 5
6. (a) What is the difference between variant and knowledge base process planning for casting ? 5
- (b) Write a short note on process mapping. 5

7. (a) Explain the parameters involved in the machine selection while developing a process plan. 5
- (b) Discuss the various types of engineering materials used in manufacturing. 5
8. (a) What is machining cost ? Explain the elements of machining cost. 5
- (b) Write short notes on the following :
- (i) Manufacturing lead time
- (ii) Production rate 5
9. (a) Describe the statistical process control. 5
- (b) Explain the two methods of calculating quality losses. 5
10. (a) Explain the role of CAPP in non-machining applications. 5
- (b) What are the advantages of poly code over mono code ? 5
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