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BME-011

B.Tech. MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

Term-End Examination

00763

December, 2018

BME-011 : COMPUTER AIDED PROCESS PLANNING

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is allowed.*

1. (a) Explain production planning system with the help of neat sketch. 7

(b) Describe the advantages and disadvantages of CAPP. 7

2. (a) What is route sheet ? Mention the guidelines to prepare it. 7

(b) Write the various steps involved in process planning. 7

3. (a) What are the various CAPP techniques ? Explain any one technique with suitable example. 7

(b) Describe the database system for machinability and part print analysis. 7

4. (a) Explain the principles to be used for selecting cutting tools in the case of CNC turning centre. 7

(b) List the factors which provide the optimum sequence for a machining operation. 7

5. (a) What do you understand by the process capability of a manufacturing process ? List different parameters to determine the process capability. 7

(b) A cutting tool cutting at 25 m/min gave a life of 1 hour between regrinds when operating on roughing with mild steel. What will be its probable life when engaged on light finishing ? Assume n = 1/8 for roughing and n = 1/10 for finishing. 7

6. (a) Discuss the components associated with the total production cost of machined components. 7

(b) How do you decide that process is under control or out of control using control charts for variables ? 7

7. (a) Enlist the broad objectives in developing CAPP system for sheet metal forming process. 7

(b) List down the activities carried out by the planning engineers in a foundry and casting environment which form the basis of developing CAPP system. 7

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

(a) Tolerance Analysis

(b) Break Even Chart

(c) Knowledge Based Expert System

(d) Statistical Quality Control

(e) Part Fabrication

(f) Process Capability
