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**BME-011**

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

00979

## Term-End Examination

## June, 2016

## BME-011 : COMPUTER AIDED PROCESS PLANNING

*Time : 3 hours* *Maximum Marks : 70*

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

**1.** (a) Explain production planning and operation planning. 5

(b) Differentiate between process planning and computer aided process planning. 5

**2.** (a) Discuss with figure the factors taken into consideration in CAPP. 5

(b) Give the advantages and disadvantages of CAPP. 5

3. (a) Give the preliminary steps to extract the general characteristics of workpiece. 5

(b) What difficulties are encountered in reading and interpreting the past prints ? 5

4. (a) Explain the role of cutting tools and list the various cutting angles. 5

(b) How can the functional surfaces on the workpiece be identified ? 5

5. (a) How will you develop CAPP for sheet metal forming process ? 5

(b) Find the speed for two hours tool life for dry machining of free cutting of mild steel with HSS tool.

Value of C for free dry cutting of mild steel is 74 m/min and n = 0·125. 5

6. Explain in detail the part family formation in case of process planning. 10

7. (a) Explain the various material properties that are of interest to process planners. 5

(b) Elaborate the role of material selection in the design process. 5

8. (a) Discuss in brief the elements of tool cost. 5

(b) What are the various constraints that are possible in case of turning ? Explain any two in detail. 5

9. (a) Define process capability. How is it used ? 5

(b) Define standard deviation. Identify the factors that can cause the process to become out of control. 5

10. (a) Describe the various criteria for selecting a CAPP system. 5

(b) Explain how variant process planning is implemented. 5