

7. (a) Explain the advantages and limitations of numerical control of machine tools. 10
- (b) How is cutter compensation given in the case of a machining centre ? Explain it with the help of an example how it is operational. Specify any of the limitations in using this facility. 10

**SECTION – D**

8. What is group Technology ? What are the benefits of group technology ? What are the various stages of adopting Group Technology ? 20
9. How classification and coding of parts is done in Group Technology (GT) layouts ? Also give some benefits of using GT principal in production plants. 20

Roll No. ....

**24261**

**B. Tech. 5th Semester (ME) (Common with Special Chance) Examination – December, 2019**

**MANUFACTURING TECHNOLOGY-II**

Paper : ME-309-F

Time : Three Hours ] [ Maximum Marks : 100

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Attempt *five* questions in all. Question number *one* is *compulsory* and select *one* question from each Section.

1. (a) Define an NC system. 2
- (b) Define MCU. 2
- (c) Define absolute and incremental coordinate system. 2

- (d) Define Production Flow Analysis. 2
- (e) Name the different coding systems. 2
- (f) Uncoated tools. 2
- (g) Clamping devices. 2
- (h) What do you mean by jig and name the various types jig. 4
- (i) Tool signature of single point cutting tool. 2

#### SECTION - A

2. (a) Explain the mechanism of chip formation and classify the various types of chips along with the condition of their formation. 10
- (b) What do you mean by tool life and explain the various factors which govern tool life. 10

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3. An orthogonal cutting of steel is done with  $10^\circ$  rake tool, with a depth of cut 2 mm and feed rate of 0.20 mm/rev. The cutting speed is 200 m/min. The chip thickness ratio is 0.31. The vertical cutting force is 1200 N and the horizontal cutting force is 650 N. Calculate from the Merchant's theory, the various work done in metal cutting and shear stress. 20

#### SECTION - B

4. Explain the Abrasive jet machining process along with its Principle. Also discuss its applications, and process parameters with the help of neat sketch. 20
5. (a) Explain the Milling Fixtures with the help of neat diagram. 10
- (b) Write the short note on Electron beam machining. What are the methods generating electron beam? 10

#### SECTION - C

6. Define CNC and DNC with their advantages, disadvantage and compare CNC and DNC. 20

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