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BME-004

01054

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

Term-End Examination

June, 2011

BME-004 : CNC TECHNOLOGY

Time : 3 hours *Maximum Marks : 70*

Note : *All questions carry **equal** marks. Answer **any seven** questions. Assume missing data if any.*

1. With the help of suitable flow diagram, show the typical stages in the product development. Briefly describe the role of CNC Technology in particular stages of product development . **10**

2. With the help of suitable block diagram, briefly describe different subsystems of CNC control system. **10**

3. (a) Write the typical specifications of the motor used to drive spindle in CNC machine tools. **5**

   (b) Name the different feed drives that are used in CNC machine tools. Describe any one with suitable sketches. **5**

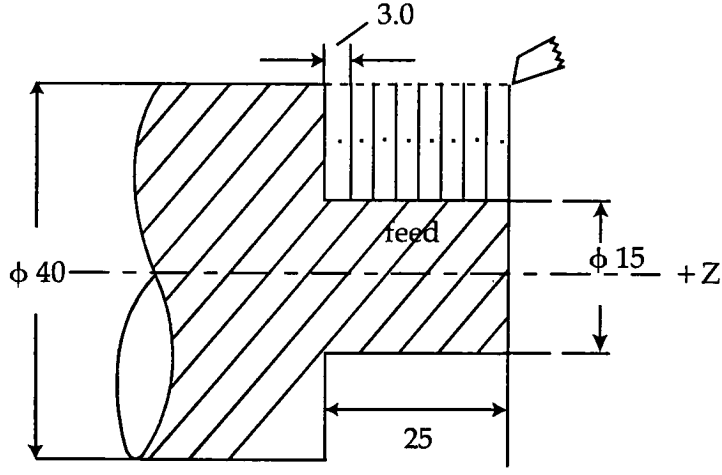
4. (a) Write atleast ten preparatory functions and their G-Code, that are generally used in most of the machining centres. 5

(b) Write atleast ten miscellaneous function and their respective standardized code. 5

5. State the difference between machining centres and turning centres from the programming point of view. Give suitable examples in support of your answer. 10

6. Explain any one Canned cycle format that you are familiar with. Write a CNC part program of the part given below. 10

Use Standard Canned cycle in the programme.



All dimensions are in mm.

7. With the help of suitable sketch give the APT geometry definition of the following 10

(a) Point
(b) Line
(c) Circle
(d) Plane
(e) Pattern.

8. What is Master Cam ? Sketch the opening screen of Master cam. Name its different sections and their respective functions. List different main menu options. 10

9. Explain the purpose of DNC in shop floor. Briefly describe the typical DNC operations. 10

10. What are the steps involved in developing a cell layout ? Briefly explain the functions. 10