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BME-004

B.Tech. MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

00883

Term-End Examination

December, 2018

BME-004 : CNC TECHNOLOGY AND PROGRAMMING

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **seven** questions. All questions carry equal marks.*

1. (a) Describe the elements of NC machine tools.

(b) State the advantages and disadvantages of numerical control of machine tools. *5+5*

2. (a) Describe five applications where the touch trigger probes can be used on a shop floor.

(b) What are the various types of information that need to be considered by a part programmer for writing a CNC part program ? *5+5*

3. (a) Explain the need of canned cycles in milling.

(b) Discuss the concept of post-processor used in computer aided part programming. *5+5*

4. (a) What are the various functions served by the use of DNC ? State the situation where DNC will be beneficial.

(b) Describe the purpose of setting an FMS. *5+5*

5. (a) Briefly describe the types of electric drives used in CNC machine tools.

(b) What are the various types of tool magazines used in CNC machine tools ? Give their relative merits. *5+5*

6. (a) Differentiate between turning centre programming and machining centre programming.

(b) Explain the working of a bus network. Also discuss in brief the reasons for its wide usage. *5+5*

7. (a) Write any ten APT geometry commands and any ten APT motion commands used in APT language.

(b) How are NC machines classified ? Explain briefly. *5+5*

8. (a) Explain the need of a computer aided part programming system.

(b) Give the comparison between conventional machines and NC machines. *5+5*