No. of Printed Pages : 3

BME-057

DIPLOMA IN MECHANICAL ENGINEERING (DME)

00768

Term-End Examination

June, 2014

BME-057 : CNC MACHINES

Time : 2 hours *Maximum Marks : 70*

Note : *Answer any* ***seven*** *questions.*

1. (a) What are the advantages of NC over conventional methods of machine controls ? *5*

(b) What are the basic components of NC machines ? Explain. *5*

2. (a) Describe the principle of NC machines. *5*

(b) What are the various controlled axes in Milling and Drilling machines ? Explain briefly with the help of sketches. *5*

3. (a) Explain any two Driving systems in NC control machines. *5*

(b) What are the different Feedback devices that are used in NC machines ? Explain briefly. *5*

4. (a) Classify the NC systems based on control system. *5*

(b) How is the axis of NC machines identified ? *5*

5. (a) Explain the various parts in CNC machines. *5*

(b) Write the advantages and disadvantages of CNC machines. *5*

6. (a) Explain any two types of part programming used in CNC machines. *5*

(b) Explain the following fundamental elements for developing part programming : *5*

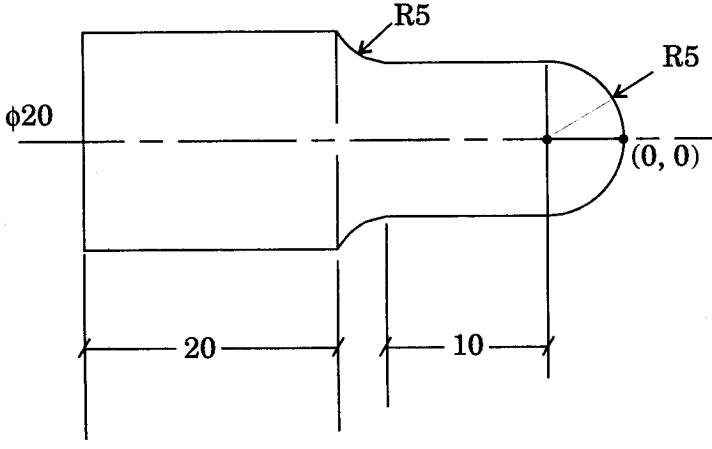
(i) Axis Designation

(ii) NC words

7. (a) Explain the spindle function and feed function which are used in CNC part programming. *5*

(b) What is meant by work setting and offsets ? Explain with the help of suitable figures. *5*

8. (a) Write a part programming for the given turning operation by using G-code and M-code by using circular interpolation. *5*



(b) Explain linear interpolation and circular interpolation. 5

9. (a) What are the different work holding devices for CNC machines ? 5

(b) Classify the tools on the basis of setting up of tools, tool construction and cutting tool materials. 5

10. Write short notes of the following :

(a) Automatic tool changer 5

(b) Absolute co-ordinate system and Incremental co-ordinate system 5