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BME-057

DIPLOMA IN MECHANICAL ENGINEERING (DME)

01351

Term-End Examination

December, 2013

BME-057 : CNC MACHINES

Time : 2 hours *Maximum Marks : 70*

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

1.	(a)	Write about Direct Numerical Control (DNC) machines and their advantages.	5
	(b)	Explain the CNC concept with neat sketch.	5
2.	(a)	Discuss about the problems that arise with conventional systems.	5
	(b)	Explain about the principles of NC machines.	5
3.	(a)	Brief about the Fundamental Elements for developing manual part programme.	4
	(b)	Explain how do you identify 3 axes of NC machines with example.	6
4.	(a)	Explain about the following with diagrams : (i) Point to Point motion Control system (ii) Straight line Control system	5
	(b)	Brief about the symbols used in NC machines.	5

5. (a) How do you classify the NC system based on control system features ? Explain with neat sketch. 6

(b) Briefly explain the following : 4

(i) Absolute Co-ordinate system

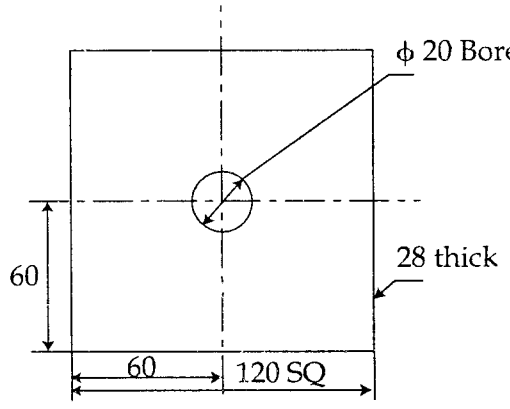
(ii) Incremental Co-ordinate system

6. (a) Explain about working of CNC machines with neat sketches. 5

(b) Write about Qualified tools. What are the requirements, these tools should satisfy ? 5

7. (a) Explain about Automatic Tool changer and its advantages. 4

(b) Write a part programming for the given operations, by using G-codes and M-codes. (All dimensions are in mm.) 6



8. (a) Explain the Design features of CNC Tooling. 4

(b) What are the types of Interpolation ? Explain about circular Interpolation. 6

9. (a) Explain the following : 4

(i) Feed function

(ii) Sub routine

(b) Explain about various cutting tools used for CNC machines, with examples. 6

10. Write short notes of ***any two*** of the following : 5+5

(a) Part programming for lathe machine

(b) Work Holding devices for CNC machines

(c) Standard G and M Codes