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BME-004

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

Term-End Examination

December, 2015

**BME-004 : CNC TECHNOLOGY AND
PROGRAMMING**

Time : 3 hours

Maximum Marks : 70

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

1. (a) With the help of a layout, explain about CNC System. 6
- (b) What is the importance of Tool Presetting ? Explain the procedure for tool presetting. 4
2. (a) Explain some of the basic forms of work loading systems. 5
- (b) Write about features of NC Machine Tools. 5
3. (a) Discuss about 'part programing fundamentals' with a suitable example. 5
- (b) Explain about the hardware used in NC-Machine control. 5

4. (a) Write about APT language structure, with at least five library functions in addition to arithmetic functions. 6
- (b) Write in brief about DNC Machines. 4
5. (a) Explain the importance of cutter radius compensation with the help of examples. 6
- (b) What are the advantages of CNC based manufacturing? 4
6. (a) What is Flexible Manufacturing System (FMS) and what is the need for FMS? 5
- (b) Write in brief about Automated Guided Vehicle System (AGVS). 5
7. (a) Explain the concept of canned cycle in milling, with the help of an example. 5
- (b) Write about 'Unmanned machining'. 5
8. (a) Discuss about Automated Storage/Retrieval System(AS/RS). 5
- (b) Give the various forms of specifications used for radius/centre with the circular interpolation. 5

9. For the component shown below (Figure 1), make a part program for machining on CNC lathe. (All dimensions are in mm) 10

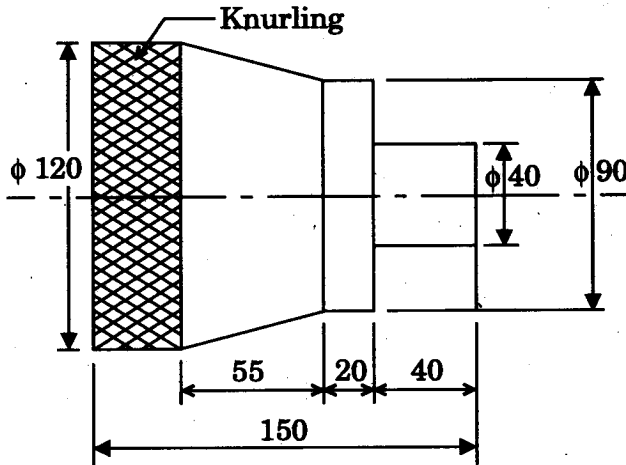


Figure 1

10. (a) Write about the work holding devices used for CNC Machines. 5
- (b) What are the problems in implementing Flexible Manufacturing Systems (FMS)? 5