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Roll No

MMPD-301(A)
M.E./M.Tech., III Semester
 Examination, December 2017

Mechatronics and Flexible Manufacturing

(Elective-I)

Time : Three Hours

Maximum Marks : 70

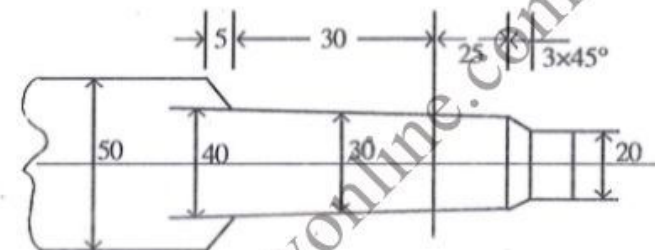
Note: i) Attempt any five questions out of eight.
 ii) All questions carry equal marks.

1. a) Define mechatronics and define key elements of mechatronics system. 7
 b) Differentiate between FMC, FMS and CIM? 7
2. a) What are the important features considered while CNC machine Building. 7
 b) How the incremental linear transducers used in CNC machine tool for measuring the incremental system? Explain in detail. 7
3. a) With the simple sketch, explain linear motion bearing system in CNC. 7
 b) Describe simple sketch, Constructions, working and stepping sequence of stepper motor. 7
4. a) What do you understand by PLC? Explain with neat diagrams all the system of PLC. 7
 b) "Use of canned cycle reduce the length of a manual part programme" justify this statement with suitable example? 7

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5. a) What is a CL data file? Explain significance. Describe features of CNC machining centres? 7
 b) Write down the steps to CNC programming and machining with suitable example. 7
6. Write down CNC part programme for the Figure. Assume suitable spindle speed and feed use standard 750 G and M codes 14



7. a) What are the function of DNC link? 7
 b) How computers are helpful in NC code generation? 7
8. a) What is the use of adaptive control in CNC machining? Describe with neat sketch? Also describe its types. 7
 b) What is die sinking operation? Explain and draw neat sketch wherever possible? 7

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