

Please check whether you have got the right question paper.

- N.B:
1. Question.No.1 is compulsory.
  2. Attempt any three questions out of remaining 5 questions.
  3. Assume suitable data, if required.

1. Write short note (any four) **20**
  - a) Working of stepper motor
  - b) ISO coding for boring bar
  - c) APC
  - d) AS / RS
  - e) CMM
2.
  - a) Explain the salient features of a CIM system. **10**
  - b) Describe the various elements of CAM system with a neat block diagram. **10**
3.
  - a) Describe types of adaptive control in detail. **10**
  - b) Write the names of three important tool materials, their compositions and applications. Also explain tool pre-setting. **10**
4.
  - a) Explain in detail Integrated Production Management system. How it is useful in reducing Time losses? **10**
  - b) Discuss the techniques used in lean manufacturing with a case study. **10**
5.
  - a) What is computer aided part programming? Describe drive, part, check surface and TO, ON, PAST, FWD commands with sketches. **10**
  - b) Explain any two G codes and M codes. Explain the functions and importance of subroutines and macros. How to call subroutine and return to main program Give example. **10**
6.
  - a) Discuss in detail components, types and guidance methods for AGV's. **10**
  - b) Describe retrieval and generative type CAPP system in detail. **10**

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