Computer Aided Manufacturing (2171903)

Assignment-1

1. What is CIM? Explain Components of CIM
2. What are the different types of manufacturing? Make an assessment of the extent of computer control in specific cases of each types of manufacturing
3. Explain clearly the difference between NC, CNC and DNC machine
4. Which are the basic components of NC system? Briefly discuss function of each component.
5. Discuss the Open loop & Closed loop control system of NC/CNC machines.
6. Explain axis identification for Lathe, Milling & Drilling machines with neat sketches.
7. Discuss the salient features of Absolute & Incremental programming system with suitable example.
8. Explain recirculating ball screw used in CNC machine.
9. Explain Do loop, subroutine and macro with suitable example.
10. What is tool compensation? Explain tool length and cutter radius compensation.
11. Discuss the salient features of point to point, straight line and contouring CNC systems with neat sketches.
12. What are the essential elements of a PLC system?

Assignment-2

1. Why is part classification and coding required in GT. Explain OPTIZ system of coding.
2. What is Group Technology? What are the advantages of GT in manufacturing?
3. What is Production Flow Analysis in GT? Explain with suitable example.
4. Explain the variant type CAPP system. State the benefits and limitations of variant type CAPP systems.
5. Write short note on Automatic Storage and Retrieval Systems and their applications areas in FMS.
6. What is Automated Guided Vehicles? Explain different types of AGVs with their advantages and limitations.
7. What are the different types of drives used in robots?
8. What is FMS? Explain the basic components of FMS.
9. Explain with neat sketch the various types of layouts used in FMS design and their applications.
10. Differentiate between a SCARA and a gantry robot.
11. Classify and explain Robots.
12. Define robot and explain different joints used in robots.
13. Write short notes on: (i) Robot sensors & (ii) End-effectors in robots.
14. Explain how robot is programmed? Explain different programming methods.
15. Explain robot configurations with neat sketches.