

- (b) (i) Consider a point $P(3,2)$ in a coordinate plane. Perform reflection of the point "P" through y axis and through x axis.
- (ii) Discuss about the operator input devices used at the graphics workstation. (6)

12. (a) With neat sketch explain the seven layer of OSI model (Computer networking in CIM).

Or

- (b) Explain the components of local area network and network topologies.

13. (a) (i) Explain about Parts classification coding. (6)

- (ii) Describe about the OPTIZ coding system. (7)

Or

- (b) Explain in detail about production flow analysis.

14. (a) Explain about factory data collection system.

Or

- (b) Explain about the bar code printers and RFID with its application.

15. (a) Write a short notes on :

- (i) Cost planning and control (7)

- (ii) Inventory Management (6)

Or

- (b) With neat sketch explain in detail about direct digital control.

PART C — (1 × 15 = 15 marks)

16. (a) Discuss the benefits of Computer Aided Process Planning (CAPP) and explain CAPP approaches in detail.

Or

- (b) Explain the objectives, principles, tools and various concept of Lean Manufacturing.