

13.a.i) Explain about different interpolation schemes in NC system (8)

ii) Explain about motion and position control in CNC machines. (8)

(OR)

13.b.i) Explain the joints and links of an industrial robot with necessary sketches. (8)

ii) Explain the different types of grippers used in robotic applications. (8)

14.a.i) Explain the types of conveyor systems used for material handling. (8)

ii) Explain the basic components of an AS/RS with sketch. (8)

(OR)

14.b.i) Quantitatively analyze an AGVS operations for its performance measure. (8)

ii) Describe the configuration and control feature of a carousal storage system. (8)

15.a.i) Explain the types of solid modeling with example. (8)

ii) Explain about two dimensional transformations of the graphic elements. (8)

(OR)

15.b.i) Explain about the rules considered in designing graphics software? (8)

ii) What is concatenation in transformations. (8)