



M.Tech II Semester Supplementary Examinations August/September 2018

CNC TECHNOLOGY & PROGRAMMING

(CAD/CAM)

(For students admitted in 2013, 2014, 2015 & 2016 only)

Time: 3 hours

Max. Marks: 60

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Discuss the importance of CNC machine tools over conventional machine tools and present the results in a tabulated form.
(b) With schematic diagrams, explain the working principle of CNC machine tools and indicate various elements in CNC machine tools.
- 2 (a) Discuss the constructional features of spindle drives with an illustration.
(b) Explain any six functions / characteristics of CNC machine tool slide ways.
- 3 (a) Describe the role of Automatic Tool Changers (ATC) in machining centers with schematic diagrams.
(b) Sketch the schematic view of a CNC machine tool with its accessories.
- 4 (a) With schematic diagram, explain the construction and working principle of rotary encoder.
(b) Explain the concept of Moire fringe method in displacement measurement of CNC machine table.
- 5 (a) Differentiate between sensors and transducers. Highlight any four types of sensors / transducers.
(b) Discuss the working principle and characteristics of electro-magnetic positional transducers.
- 6 (a) With a block diagram, explain the open-loop and closed-loop control systems.
(b) Discuss standard features of CNC control systems.
- 7 (a) Explain the APT programming language structure with one example.
(b) Discuss APT motion commands with examples.
- 8 (a) Explain the factors influencing while selecting CNC machine tools.
(b) Describe the method of calculating the machine-hour-rate with one example.
