Total No. of Questions : 5] *[Total No. of Printed Pages : 2*

Roll No .....

IP/IEM/ME/PR-603

B.E. VI Semester

Examination, June 2016

Metal Cutting and CNC Machine

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
ii) All parts of each questions are to be attempted at one place.
iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.
iv) Except numericals, Derivation, Design and Drawing etc.
v) Draw neat and clean sketches/diagrams/figures wherever required.

1. a) State the classification of machine tools.
   b) State the Effect of Back Rake Angle and Mention its Types.
   c) State the function of Clearance Angle and state its types.
   d) Discuss various lathe machine operations with neat sketches.

   OR

   State the thread production methods. Describe any one in detail.

2. a) Define the Grinding. What is Dressing and Truing?
   b) State brief about types of Abrasives used in Grinding.
   c) How grinding wheels are specified? State in brief?
   d) Discuss types of grinding machines.

   OR

   Explain centre-less grinding process. State its advantages and limitations.

3. a) Define the term Milling. How it is different than grinding?
   b) State the classification of Milling Machines.
   c) Draw Universal Dividing Head.
   d) Sketch a neat diagram, showing important components of Universal Milling Machine.

   OR

   Classify Drilling Machines. Draw a neat diagram of Radial Drilling Machine labelling components.

4. a) State the classification of shaper machines.
   b) State the classification of gear cutting processes.
   c) Define the terms : CLA Value. State the equipments used for rating the surfaces.
   d) Explain Quick Return Motion Mechanism used in shaper with neat sketch.

   OR

   Briefly explain the following term :
   i) Gear forming ii) Gear shaping
   iii) Gear shaving

5. a) What do you understand by Control System? State its applications.
   b) What are Electronic Switches? State its function and types.
   c) Explain the following terms :
      i) Transducer ii) Servomotor
   d) Explain PLC covering following points :
      i) Basic theory and functions
      ii) Timers and relays
      iii) Programming
      iv) Applications

   OR

   Explain CNC covering following points :
   i) Function ii) Types of CNC
   iii) Features of controllers iv) Applications.

******