

Roll No.

IP/ME-603(N)

B. E. (Sixth Semester) EXAMINATION, June, 2010

(New Scheme)

(Common for IP & ME Engg.)

METAL CUTTING AND CNC MACHINE

Time : Three Hours

Maximum Marks : 100

Maximum Pass Marks : 35

Note : Attempt any *five* questions. All questions carry equal marks.

Unit-I

1. (a) Explain the various operations on lathe machine. 10
- (b) Write the difference between capstan and turret lathe. 10

Or

2. (a) What is meant by tool signature ? Give tool signature for any *one* single point HSS tool and explain its meaning. 10
- (b) What do you understand by positive, negative and zero rake of a single point cutting tool ? 10

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Unit – II

3. (a) Explain the surface, cylindrical and internal grinding. 10
 (b) Explain the grain number and grade of grinding wheel. 10

Or

4. (a) What do you understand by traverse grinding and plunge grinding? How can these two be differentiated. 10
 (b) Explain the procedure for dressing and truing of grinding wheels with the help of neat sketches. 10

Unit – III

5. (a) What are the applications of various drilling machines? Discuss. 10
 (b) Explain the tool holding devices used on drilling machines. 10

Or

6. (a) What is Broaching? How broaching is advantageous over other machining processes? Draw a broach and give its complete nomenclature. 10
 (b) How the size of a drilling machine is specified? Discuss. 10

Unit – IV

7. (a) Draw a neat sketch of a shaping machine, showing all its main parts and explain the functions of these parts, in brief. 10
 (b) Explain the automatic feed mechanism of a shaper. 10

Or

8. (a) Explain the working of a hydraulic shaper. Compare hydraulic and mechanical shapers. 10
 (b) Explain the causes of surface irregularities. 10

Unit – V

9. (a) What are the different types of gear? Explain in brief. 10
 (b) Describe the various application areas of CNC. How does CNC differ from NC and DNC machines? 10

Or

10. (a) Explain the principle of operation of CNC. Describe the main features of CNC. 10
 (b) List various methods of gear manufacturing. Describe any one. 10