FACULTY OF ENGINEERING

B.E. 4/4 (Mech. / Prod.) I-Semester (**Old**) Examination,
November / December, 2009

Subject : **Tool Design**

Time : 3 Hours

Max. Marks: 75

Note: Answer all questions of Part-A and
answer any **Five** questions from Part-B.

PART-A (25 Marks)

1. What are super high speed steels? Give their composition.
2. What is the principle of operation of Abrasive Jet machining?
3. Explain the general consideration in the design of a peripheral milling cutter.
4. Distinguish 'push type broach' with 'pull type broach'?
5. What are advantages and drawbacks of an adjustable reamer?
6. What are the general considerations in design of taps?
7. What are strippers?
8. What are the methods of reducing cutting forces in blanking operation?
9. Distinguish between pierciry & blanking.
10. In broach tool, what are the functions of rear and front pilots?

PART-B (50 Marks)

11.a) Classify carbide tools.
b) What are various cutting tool materials? Give their historical development. compare their cutting speeds commercial cost and other technical considerations.

12.a) Differentiate between up milling & down milling.
b) How do you determine the form tool profile for a given race angle and tool setting height?

13.a) Draw a neat sketch of a twist drill and indicate its standard designations.
b) Explain the methodology used to determine the manufacturing tolerances in reamers.

14.a) What are the considerations in design of a progressive press-tool?
b) Draw neat sketches and explain the uses of the following :
i) Stock guides ii) Stock stops iii) Knock out

15.a) Sketch and explain a compound die construction.
b) Sketch the methods of mounting puches in punch plates

16.a) Explain 3-2-1 principle of location.
b) Sketch and explain various types of locating pins.

17. Write short notes on any **three** of the following :
a) Operation principle of EDM
b) Plastic dies