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## ***B.Tech. Degree VI Semester Examination April 2018***

### **ME 605 TOOL ENGINEERING AND DESIGN**

(2006 Scheme)

Time : 3 Hours

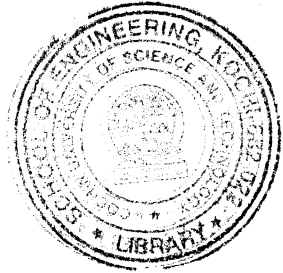
Maximum Marks : 100

#### **PART A**

(Answer **ALL** questions)

(8 × 5 = 40)

- I. (a) Name the basic types of metal cutting operations and describe the tools used for these operations.
- (b) Write notes on grinding wheels and their selection.
- (c) What is the use of a tool dynamometer?
- (d) What is the mechanism of orthogonal cutting?
- (e) Explain the factors affecting machinability.
- (f) How is productivity of machine tools assessed?
- (g) Differentiate between jigs and fixtures.
- (h) Write notes on press working and die block design.



#### **PART B**

(4 × 15 = 60)

- II. Sketch a single point cutting tool and mark rake angles and clearance angle on it.  
**OR**
- III. Explain cutting tool materials and their properties.
- IV. What are the different types of chips formed during machining? What information is revealed by them about the material being machined?  
**OR**
- V. Explain the thermal aspects of machining. What percentage of heat transferred to a single point cutting tool during machining operation?
- VI. Explain tool wear and tool life. How is tool life assessed?  
**OR**
- VII. Explain the economics of machining.
- VIII. Write notes on '**any three**' from the following :
  - (i) Design considerations common to jigs and fixtures.
  - (ii) Drill jigs.
  - (iii) Milling fixtures
  - (iv) Type of clamps.
  - (v) Principle of Pin location.