



Printed Pages : 3

TME504

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 4077

Roll No.

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**B.Tech**

(SEM V) ODD SEMESTER THEORY EXAMINATION 2009-10  
 MANUFACTURING SCIENCE-II

Time : 3 Hours]

[Total Marks : 100

- Note :**
- (1) Attempt *all* questions.
  - (2) *All* questions carry *equal* marks.

1 Attempt any **four** parts of the following :

- (a) Why crater is formed at some distance above the tool tip on the rake face? 5
- (b) Discuss the important factors that affect tool life. 5
- (c) How cutting fluids are effective in improving tool life? 5
- (d) Discuss the various criteria used for optimizing the cutting condition. 5
- (e) Draw the tool geometry of a single point cutting tool and show different angles. 5
- (f) What are the different parameters affecting the cutting force/power required in machining process? - Explain. 5



- 2 Attempt any **two** parts of the following :
- (a) Draw the block diagram of a centre lathe and explain its different components. 10
  - (b) Differentiate between shaping, planning and slotting with respect to relative tool and work motions. Describe various operations performed on them. 10
  - (c) Explain the working principle of dividing head in milling machine. Draw schematic sketch of milling machine. 10

- 3 Attempt any **two** parts of the following :
- (a) Explain the centreless grinding process. What are its advantages and disadvantages? 10
  - (b) How are grinding wheels specified as per Indian Standard? Explain truing and dressing of grinding wheel. 10
  - (c) What is limit? Explain the important terms used in limit system. Also discuss the importance in the area of manufacturing. 10

- 4 Attempt any **two** parts of the following :
- (a) Explain the soldering and brazing operations. How they differ from welding? Discuss their applications. 10
  - (b) What is resistance welding? Explain the process and equipment used in this process. 10
  - (c) Explain the metallurgy involved in welding. 10

- 5 Attempt any **two** parts of the following :
- (a) What is the function of electrolyte in ECM? Also list the requirement of tool material for ECM. Enlist the application of ECM. 10
  - (b) Explain the principle of ultrasonic machining (USM). What is the difference between ultrasonic grinding and conventional grinding? 10
  - (c) What is explosive welding? Explain with neat sketch. Give the advantages, limitations and its industrial applications. 10