



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

**PAPER ID : 140503**

Roll No.

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**B. Tech.**

(SEM. V) (ODD SEM.) THEORY  
EXAMINATION, 2014-15  
MANUFACTURING SCIENCE-II

Time : 3 Hours]

[Total Marks : 100

- 1 Attempt any **FOUR** parts of the following : **5x4=20**
- a) Differentiate between orthogonal and oblique cutting.
  - b) Describe twist drill nomenclature using sketches.
  - c) What is the function of bonds in grinding wheel? Indicate bonding materials and name their corresponding grinding wheel.
  - d) What is limit, fit and tolerance? Discuss.
  - e) Differentiate TIG welding and MIG welding.
  - f) Write short notes on explosive cladding.
- 2 Attempt any **TWO** parts of the following : **10x2=20**
- a) Consider the various forces acting on the chip, draw merchant force diagram. State the assumptions.
  - b) What are the purposes of cutting fluids? What are the types?

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- c) What are the desirable characteristics of cutting tool materials? Describe them briefly.
- 3 Attempt any **TWO** parts of the following : **10x2=20**
- a) Describe in brief various parts of capstan and turret lathes.
  - b) What are the different horizontal boring machines? List them and specify their suitability.
  - c) Describe with a line diagram of withworth quick return mechanism used in Slotter.
- 4 Attempt any **TWO** parts of the following : **10x2=20**
- a) What is meant by Grit, Grade and Structure of grinding wheel?
  - b) Discuss the honing process in detail with neat sketch.
  - c) Briefly describe the main features of surface grinding.
- 5 Attempt any **TWO** parts of the following : **10x2=20**
- a) Briefly describe the main features of resistance welding process with a neat sketch.
  - b) Explain how the operation of AJM is carried out. What are the limitations of AJM?
  - c) Discuss diffusion welding process in detail with a neat sketch.