

**R09****Code: 9A03403**

B.Tech II Year II Semester (R09) Supplementary Examinations December/January 2015/2016

**MANUFACTURING TECHNOLOGY**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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- 1 (a) Describe the stages in the construction of a wood pattern.  
(b) Compare the advantages and limitations of wood as pattern material to metal.
- 2 (a) Describe briefly Nucleation and grain growth related to casting.  
(b) Explain the working principle of a crucible furnace with sketch.
- 3 (a) What are the two polarities of DC supply used in arc welding? Explain with sketch.  
(b) The voltage length characteristics of a DC arc is given by  $V = 20 + 30L$ , where 'V' is the arc voltage and 'L' is the length of arc in cm. Determine the open circuit voltage and short circuit for arc lengths ranging from 3 to 5 mm and current ranging from 200 to 400 amp during welding operation.
- 4 (a) What are the types of Lasers used in Laser beam welding?  
(b) What is the principle of Laser welding process?
- 5 (a) Mention the materials used for rolls.  
(b) What are the different types of rolling mills? Explain the tandem and planetary rolling mills with neat diagrams.
- 6 (a) Discuss the speed of travel wire feeding through a group of successive dies.  
(b) How does the coining differ from embossing? Which requires more energy at the point of impact?
- 7 (a) Describe back ward extrusion with neat sketch. Write its advantages and applications.  
(b) What are the various forging operations? Explain.
- 8 (a) Explain the principle of EBM with neat diagram.  
(b) Distinguish between the EBM and LBM. Explain why the former is more widely used than the later.

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