

**PDFZilla – Unregistered**

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Total No. of printed pages = 3

**ME 131305**

Roll No. of candidate

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**2017**

**B.Tech. 3rd Semester End-Term Examination**

**Mechanical**

**PRIMARY MANUFACTURING**

Full Marks – 100

Time – Three hours

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The figures in the margin indicate full marks  
for the questions.

Answer question No. 1 and any *Six* from the rest.

1. Fill in the blanks (*any ten*) (10 × 1 = 10)
- (a) \_\_\_\_\_ is the replica of the final object to be made with some modifications.
  - (b) The ability of the moulding material to withstand the high temperatures of the molten metal so that it does not cause Fusion is called \_\_\_\_\_.
  - (c) \_\_\_\_\_ acts as a buffer for molten metal before flowing into the mould cavity.
  - (d) \_\_\_\_\_ are used for localised cooling of molten metal.
  - (e) \_\_\_\_\_ is used for effective descaling in rolling.

[Turn over

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- (f) \_\_\_\_\_ is a forging operation used to reduce the cross-section of the part.
- (g) The portion of the weld joint that is melted by the heat of welding is called \_\_\_\_\_.
- (h) Clapper box is used in shaper to prevent the tool from \_\_\_\_\_.
- (i) \_\_\_\_\_ electrodes do not require filler rods for providing filler metal.
- (j) The acetylene cylinder, in case of oxy-acetylene gas welding is painted in \_\_\_\_\_ colour.
- (k) TIG welding uses a \_\_\_\_\_ electrode.
- (l) The shape of the sprue in sand casting is \_\_\_\_\_ to prevent aspiration of air.
2. State and explain the properties required in moulding materials. Name and explain the different types of pattern allowances. (5 + 10 = 15)
3. What is continuous casting? Explain the process of investment casting. Name and explain the different types of centrifugal casting process. (2 + 3 + 10 = 15)
4. How is acetylene stored in cylinders? What are forehand and backhand welding technique? What are the different types of flames used in gas welding? Explain each of them. What are the functions of a consumable electrode in electric arc welding? (2 + 3 + 5 + 5 = 15)

5. What is TIG welding? How is heat balance achieved in resistance welding? What are the functions of shielding gases in TIG? What are the metal transfer methods used in MIG welding? (2 + 3 + 5 + 5 = 15)
6. What are drawing out and upsetting operations? What is alligating in rolling? What are the differences between hot working and cold working? State and explain the different impressions used in manufacturing a part by drop forging. (2 + 3 + 5 + 5 = 15)
7. What are the advantages of using a backward hot extrusion process over forward hot extrusion process? What is wire drawing? What is impact extrusion? Explain the forward and backward hot extrusion processes. (2 + 3 + 5 + 5 = 15)
8. What is the difference between blanking and piercing operation? Explain the process of deep drawing. What is the function of a blank holder in deep drawing? State and explain the different types of explosive forming processes. (2 + 5 + 3 + 5 = 15)
9. What is upmilling and down milling. Explain the methods used to obtain the metallic powder for powder metallurgy processes. Explain the process of sintering in powder metallurgy. (5 + 5 + 5 = 15)