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**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)
BTCLEVI/BTMEVI/BTELVI/BTCSVI/BTECVI
Term-End Examination**

June, 2019

BME-003 : MANUFACTURING TECHNOLOGY

Time : 3 hours

Maximum Marks : 70

Note : (i) Attempt any seven questions.

(ii) All questions carry equal marks.

(iii) Use of non-programmable scientific calculator is permitted.

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1. With the help of a suitable sketch, explain Submerged Arc Welding (SAW) process. Discuss its advantages, limitations and industrial applications. 10
 2. (a) Explain how impurities are removed in the Bessemer converter. 5
(b) Explain : trimming, blanking, notching, piercing and nibbing. 5
 3. While doing orthogonal machining of a mild steel part, a depth of cut of 0.75 mm is taken at 60 r.p.m. If the chip is 1.5 mm thick and is continuous, determine : 10
 - (a) Chip thickness ratio
 - (b) The length of the chip removed in one minute if work diameter is 60 mm before taking the cut.

4. (a) What is a Core ? How is core made ? Explain with the help of suitable example for sand casting. 5
- (b) Explain briefly the following properties of moulding sand : 5
- (i) Permeability (ii) Refractoriness
(iii) Collapsibility (iv) Flowability
(v) Adhesiveness
5. (a) Explain the principle of Investment Casting. Write its applications, advantages and limitations. 5
- (b) Distinguish between True centrifugal casting and Semi-centrifugal casting. 5
6. What is tool signature ? Sketch a single point-cutting tool showing different angles in ASA system. 10
7. (a) Describe the welding characteristics of Grey Cast Iron. 5
- (b) Discuss the difficulties faced in welding of materials having high thermal conductivity. 5
8. (a) Why does distortion occur in Welding ? Describe any four types of distortions in Welding. 5
- (b) What is sheet metal forming ? How are sheet metal forming processes classified ? 5
9. Write short notes on any four of the following : 4x2½=10
- (a) Spring back in bending
(b) Flux and its functions
(c) Economics of machining
(d) Effect of coolant on tool life
(e) Forging defects
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