

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

BTCLEVI/BTMEVI/BTELVI/BTCSVI/BTECVI

Term-End Examination

00288

December, 2016

BME-003(S) : MANUFACTURING TECHNOLOGY

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions. All questions carry equal marks. Use of scientific calculator is permitted.

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1. (a) What are the properties of green sand ?
How do clay and moisture content affect the properties of green sand ?
 - (b) Discuss the factors to be considered for selection of a furnace in casting. 5+5
 2. With a neat sketch, explain oxy-fuel gas cutting process. Discuss the advantages, limitations and applications of oxy-fuel gas cutting process. 10
 3. (a) What are the criteria for classifying the welding process ?
 - (b) Discuss the role of electrode coating in Shielded Metal Arc Welding (SMAW). 5+5

4. (a) Explain the mechanism of metal flow in rolling.
- (b) How is the proper alignment between the punch and the die ensured ? 5+5
5. (a) Write the important applications of shell moulding and investment casting.
- (b) With the help of sketches, differentiate between true centrifugal casting, semi-centrifugal casting and centrifuge casting. 5+5
6. Derive the equations for optimum cutting speed and optimum feed rate for maximum production rate. 10
7. (a) Discuss the significance of tool signature. Write the names of various components of tool signature for a single-point cutting tool.
- (b) With a neat graph, explain the effect of various angles on cutting force. 5+5
8. A symmetrical cup of circular cross-section with diameter 52 mm and height 52 mm, and a corner radius of 2 mm is to be obtained in C 20 steel of 0.8 mm thickness. Make the necessary calculation for designing the die for the above cup. 10