

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

BTCLEVI/BTMEVI/BTELVI/BTCSVI/BTECVI

Term-End Examination

June, 2016

00210

BME-003 : MANUFACTURING TECHNOLOGY

Time : 3 hours

Maximum Marks : 70

Note : Answer any *seven* questions.

1. With the help of a suitable labelled sketch, describe the operation of electric arc furnace. Write its advantages and limitations. 10

2. (a) What are the basic requirements of a core sand ? In what respect is it different from the moulding sand ? 5

- (b) What are the advantages and limitations of the permanent mould over expendable mould ? 5

3. With the help of a suitable sketch, describe the centrifugal casting. What are its types ? Give the advantages, disadvantages and applications. 10
4. (a) Explain the difference between true strain and engineering strain using stress – strain curve for a typical ductile material. 5
- (b) Write the difference between hot working and cold working. 5
5. (a) What is the broad classification of sheet metal forming processes ? 5
- (b) Define notching, nibbing, blanking, piercing and trimming. 5
6. (a) The specification of a turning tool is given by 8, 8, 6, 6, 10, 15, 0.5. Write the names of different angles indicated in the specification. 5
- (b) With the help of a suitable graph, show the effect of back rake angle on cutting force F_c . 5
7. Derive the equations for optimum cutting speed and optimum feed rate for the case of maximum production rate. 10
8. (a) What is the difference between melting and fusion and what is necessary to get a weld ? 5
- (b) Describe the principle of Gas Tungsten Arc Welding process. 5

9. With the help of a suitable sketch, describe the Submerged Arc Welding (SAW) process. Give its advantages, limitations and important applications. 10
10. (a) How does the coefficient of thermal expansion, thermal conductivity and yield strength of a material effect distortion? 5
- (b) Explain Plasma Arc Welding. 5
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