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**Reg. No. :**

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**Question Paper Code: 53702**

B.E./B.Tech. DEGREE EXAMINATION, MAY 2018

Third Semester

Mechanical Engineering

15UME 302 -MANUFACTURING TECHNOLOGY-I

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

Answer All Questions

1. The function of cores in casting is to CO1- R
  - (a) form extended parts
  - (b) form internal cavities
  - (c) used for directional solidification
  - (d) none of these
  
2. The purpose of gate is to CO1- R
  - (a) deliver molten metal into the mould cavity
  - (b) acts as reservoir for the molten metal
  - (c) feed the molten metal to the casting in order to compensate for the shrinkage
  - (d) deliver the molten metal from pouring basin to gate
  
3. In which of the following process non-consumable electrode is used? CO2- R
  - (a) TIG welding
  - (b) MIG welding
  - (c) LASER welding
  - (d) Plasma arc welding

4. In arc welding, arc is created between the electrode and work by CO2- R  
 (a) Contact resistance (b) Flow of voltage  
 (c) Flow of current (d) Electrical energy
5. The temperature at which the new grains are formed in the metal is called CO3- R  
 (a) lower critical temperature (b) upper critical temperature  
 (c) eutectic temperature (d) recrystallization temperature
6. Which one of the following is not the cold working processes CO3- R  
 (a) Forging (b) Bending (c) Squeezing (d) Drawing
7. In press operation, the size of the pierced hole is dependent on the size of CO4- R  
 (a) punch (b) die (c) average of punch and die (d) die and clearance
8. Which of the following die can perform multiple operations such as blanking, punching, notching CO4- R  
 (a) Simple dies (b) Progressive dies (c) Compound die (d) None of the above
9. Which of the following plastics is not used in blow moulding? CO5- R  
 (a) Terephthalate (b) Polypropylene (c) Polythene (d) PVC
10. Plastic bottles are manufactured using the process of CO5- R  
 (a) blow molding (b) injection molding (c) atomizing (d) die casting

PART – B (5 x 2= 10Marks)

11. Explain the process of core venting. CO1- U
12. Name the various types of welding flames. CO2- U

13. What are the disadvantages of forging process? CO3- U
14. What are the requirements for superplastic forming? CO4- U
15. Enlist the difference between a positive mold and a negative mold in thermoforming. CO5- U

PART – C (5 x 16= 80Marks)

16. (a) (i) Explain the term pattern allowance CO1-U (10)
- (ii) Calculate the permeability number of sand if it takes CO1-App (6)
- 1 min 25 s to pass 2000 cm<sup>3</sup> of air at a pressure of 5 g/cm<sup>2</sup> through the standard sample.
- Or
- (b) (i) Discuss the centrifugal casting process with suitable sketches. CO1 -U (8)
- (ii) Explain the different pattern making allowances with neat sketches CO1 -U (8)
17. (a) Describe in detail any two resistance welding process with neat sketches. State their advantages, disadvantages and applications CO2 -U (16)
- Or
- (b) (i) Explain any three types of welding defects with neat sketch. CO2 -U (8)
- (ii) State the differences between welding, brazing and soldering CO2 -U (8)
18. (a) Classify the extrusion process and explain anyone extrusion process with neat sketches. CO3- Ana (16)
- Or
- (b) Write a short note on Wire drawing and Tube drawing. CO3- U (16)
19. (a) What is deep drawing operation? Explain with a neat sketch. CO4- U (16)
- Or
- (b) Explain in details about the principle of operation of super plastic forming with a neat sketch. CO4 -U (16)

20. (a) (i) Explain blow molding process with its salient features CO5- U (8)
- (ii) Explain transfer molding process with neat sketches. CO5- U (8)
- Or
- (b) Choose the suitable moulding process to produce plastic beverage CO5- Ana  
bottles and explain the same with neat sketch. (16)