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**Question Paper Code: 33702**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Third Semester

Mechanical Engineering

01UME302 - MANUFACTURING TECHNOLOGY - I

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. State any four pattern allowances.
2. Mention the specific advantages of  $CO_2$  process.
3. What is the function of flux and filler materials in welding?
4. State the principle of electron beam welding.
5. What do you understand by forging? What are the two basic types of forging process?
6. State the defects in rolled parts.
7. Why it is necessary to provide proper clearance between the punch and die in shearing operation?
8. Differentiate between piercing and blanking.
9. How do thermoplastics differ from thermo-setting plastics?
10. Name the factors that influence the accuracy to which plastic parts can be moulded.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Explain the various properties required for the moulding sand. (8)  
(ii) List any five casting defects, their causes and suggest suitable remedies. (8)

Or

- (b) Define centrifugal casting. Write down the working principle in detail with neat sketch. (16)

12. (a) (i) With a help of a neat sketch describe the electro slag welding process. (8)  
(ii) Explain with a neat sketch the equipment and process of submerged arc welding. (8)

Or

- (b) With neat sketch explain the following welding process: (i) Plasma arc welding and (ii) TIG welding. (16)

13. (a) (i) With neat sketch, explain the working of a pneumatic hammer for forging. (10)  
(ii) List out and explain the various forging defects. (6)

Or

- (b) Describe deep drawing process with neat sketch and list its advantages, disadvantages and applications. (16)

14. (a) (i) Describe the hydro forming process with the help of neat diagram. (8)  
(ii) Explain the rubber pad forming process. (8)

Or

- (b) Briefly explain the following special forming process with its advantages  
(i) Explosive forming (8)  
(ii) Super plastic forming. (8)

15. (a) (i) Describe briefly the process of injection moulding as used for producing plastic components. (8)  
(ii) Explain in detail the thermoforming process. (8)

Or

- (b) Elaborate blow moulding process with neat sketch. (16)