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Question Paper Code: U3702

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Third Semester

Mechanical Engineering

21UME302 – FUNDAMENTALS OF MANUFACTURING PROCESSES

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Cast iron and steel pipes are produced by CO1- U
(a) Slush casting (b) Investment casting
(c) True centrifugal casting (d) Die casting
2. Chills are used in moulds to CO1- U
(a) Achieve directional solidification (b) Increase freezing zone
(c) Reduce freezing zone (d) Smoothen metal flow for reducing spatter
3. The ratio of acetylene to oxygen is approximately ____ for neutral flames CO2- U
used in gas welding.
(a) 1:1 (b) 2:3 (c) 3:2 (d) 2:5
4. In which of the following process non-consumable electrode is used? CO2- U
(a) TIG welding (b) MIG welding (c) LASER welding (d) Plasma arc welding
5. The volume of metal that enters the rolling stand CO3- U
(a) should increase after rolling process (b) should decrease after rolling process
(c) should remain same after rolling process (d) unpredictable
6. Castings are usually CO3- U
(a) costlier than forgings (b) cheaper than forgings
(c) at the same rate as forging for similar metal (d) none of the above
7. Punching a number of holes in a sheet is known as? CO4- U
(a) Perforating (b) Parting (c) Notching (d) Lancing

8. Shearing the sheet into two or more pieces is known as? CO4- U
 (a) Perforating (b) Parting (c) Notching (d) Lancing
9. Which plastic materials contain strong cross linkings in their molecular structure? CO5- U
 (a) Thermoplastic materials (b) Thermosetting materials
 (c) Both (a) and (b). (d) None of the above
10. Which of the following is an example of thermoplastic material? CO5- U
 (a) Camera bodies (b) Automobile parts (c) Electric plugs (d) Electric insulation

PART – B (5 x 2= 10Marks)

11. Show which process is called lost waxing method. Why? CO1- U
12. Classify fission welding and fusion welding. CO2- U
13. Explain wire drawing? CO3- U
14. Show the differences between hydro forming and rubber pad forming. CO4- U
15. Outline the differences between thermosetting and thermoplastic polymers CO5- U

PART – C (5 x 16= 80 Marks)

16. (a) Identify and briefly explain about lost wax process in casting. State its advantages and limitations. CO1-App (16)
 Or
 (b) Build a neat diagram of a cupola furnace, indicate important parts and show various stages. CO1-App (16)
17. (a) Identify and explain the resistance spot welding process with a neat sketch. State its application and limitations. CO2-App (16)
 Or
 (b) Identify and explain about Electron Beam welding process with neat sketch. CO2-App (16)
18. (a) Identify and describe deep drawing process with neat sketch and list its advantages, disadvantages and applications. CO3- App (16)
 Or
 (b) Identify the usual defects in rolled parts and explain different types of rolling mills. CO3- App (16)

19. (a) Identify and explain in details about the principle of operation of super plastic forming with a neat sketch. CO4- App (16)
- Or
- (b) Identify and explain with a neat sketch about deep drawing operation. CO4- App (16)
20. (a) Construct transfer molding process with neat sketches. CO5- App (16)
- Or
- (b) Construct blow molding process with its salient features CO5- App (16)

