Reg. No. : | | | | | | | | | | |

Question Paper Code: 53072

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Mechanical Engineering

15UME302 - MANUFACTURING TECHNOLOGY - I

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The function of cores in casting is to

   (a) form extended parts (b) form internal cavities
   (c) used for directional solidification (d) none of these

2. The tapper provided to the pattern for its removal is known as

   (a) shaking allowance (b) distortion allowance
   (c) machining allowance (d) draft allowance

3. Arc blow occurs in

   (a) AC welding (b) DC welding
   (c) Gas welding (d) Resistance welding

4. In oxidizing flame, the inner core temperature is

   (a) 2100°C (b) 2800°C (c) 3150°C (d) 3500°C

5. Hot working process is the plastic deformation of metal which is carried out

   (a) at temperature below the recrystallisation temperature
   (b) at temperature above the recrystallisation temperature
   (c) at temperature equals to boiling point of water
   (d) none of these

6. The characteristics of material used in forging process is

(a) elasticity of material (b) ductility of material
(c) plasticity of material (d) none of these

7. The removal of excess material from the edge of a strip to make it suitable for drawing without wrinkling

(a) notching (b) blanking (c) piercing (d) spinning

8. Two or more cutting operations are performed at one station of the press in every stroke of the ram in a

(a) simple die (b) combination die
(c) compound die (d) progressive die

9. The plastic materials which contain strong cross linkings in their molecular structure is

(a) Thermoplastic materials (b) Thermosetting materials
(c) Both a and b (d) None of these

10. Plastic bottles are manufactured using the process of

(a) blow moulding (b) injection moulding
(c) atomizing (d) die casting

PART - B (5 x 2 = 10 Marks)

11. Explain the process of core venting.

12. Discuss the importance of flux in welding.

13. List the advantages of hot working over cold working.

14. Define spring back. How is it recovered?

15. Outline the characteristics of thermoplastics.

PART - C (5 x 16 = 80 Marks)

16. (a) Explain the steps in 'lost wax method' with a neat sketch. Also state its merits, demerits and applications of the process. (16)

Or

(b) (i) Discuss the centrifugal casting process with suitable sketches. (6)

(ii) Explain the different pattern making allowances with neat sketches. (10)

17. (a) (i) Explain the thermit welding process with neat sketch and state its applications. (10)

(ii) Explain the process of friction welding method with neat sketches. (6)

Or

(b) (i) Discuss the submerged arc welding process with neat sketch. (10)

(ii) Distinguish between brazing and soldering. (6)

18. (a) (i) Discuss the principle of wire drawing process. (8)

(ii) Write short notes on tube piercing process. (8)

Or

(b) (i) Discuss the various types of rolling mills. (8)

(ii) Describe the rolling operations with neat sketches. (8)

19. (a) (i) Discuss the deep drawing process with neat sketch. (8)

(ii) Explain the stretch forming process with neat sketch. (8)

Or

(b) (i) Explain the following sheet metal operations (a) blanking (b) piercing (c) trimming (d) shaving. (8)

(ii) Explain the metal spinning process with a neat sketch and identify the components that are generally manufactured by this process. (8)

20. (a) Elaborate the injection moulding process for thermoplastics plastics with a neat sketch. State its applications. (16)

Or

(b) Choose the suitable moulding process to produce plastic beverage bottles and explain the same with neat sketch. (16)

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