Register Number.....

B.E. DEGREE EXAMINATIONS: NOVEMBER 2009

Second Semester

MECHANICAL ENGINEERING

U07ME201: Manufacturing Technology - I

Time: Three Hours **Maximum Marks: 100**

Answer ALL the Questions:-

PART A (10 x 1 = 10 Marks)

1. Centrifugally cast products have

A) large grain structure with high porosity

B) fine grain structure with high density

C) fine grain structure with low density

D) segregation of slag towards the outer skin of casting

2. The molten metal is poured from the pouring basin to the gate with help of a

A) riser B) Sprue C) core D) runner

3. Core prints are provided on patterns

A) to support the core

B) to locate the core in mould

C) to support as well as locate the core in the mould

D) to form internal cavities in the casting

4. Disposable patterns are made of

A) coal B) mercury C) diamond D) plastics

5. In blanking operation, the clearance provided is

A) 50% on punch and 50% on die B) on die

C) on punch D) on die (or) punch depending upon designers choice

6. Hot rolling of mild steel if carried out

A) at recrystallisation temperature B) below 100^0 c and 150^0 c

C) Above recrystallisation temperature D) below recrystallisation temperature

7. Electron beam welding can be carried out in

A) open air B) a shielding gas environment

C) a pressurized inert gas champer D) vaccum

8. In submerged arc welding, the arc is stuck between

A) Consumable coated electrode and job B) non consumable electrode and job

C) Consumable bare electrode and job D) two tungsten electrode and the job

9. The bottle from thermo – plastic materials are made by

A) Compression moulding B) extrusion C) injection moulding D) blow mould

10. The process of producing plastic components in moulds without the application of pressu is known as

A) Moulding B) laminating C) calendaring D) casting

PART B (10 x 2 = 20 marks)

11. Why the cores are reinforced?
12. What is gate ratio?
13. What is the necessity of sand testing?
14. What is Ladle?
15. Differentiate between coining and embossing.
16. What is upset forging? And how it is done?
17. What is the purpose of coating on an arc welding electrode?
18. Write the various fluxes used in the soldering.
19. What are thermoplastics and thermosetting materials?
20. Names the various methods of welding of plastics.

PART C (5 x 14 = 70 Marks)

21. (a) (i) What are the major types of sand moulds? What are their characteristics?

(ii) List important considerations when selecting pattern materials.

(OR)

(b) (i) Discuss the various pattern allowances.

(ii) Discuss the CO_2 core making process.

22. (a) (i) Sketch and explain any one of Hot chamber die casting machine.

(ii) Discuss the various defects in casting, their causes and remedies.

(OR)

(b) (i)Explain a centrifugal a centrifugal casting method with neat sketch.

(ii) What is the function of risers? Write the requirement of a good riser.

23. (a) (i) With help of suitable sketch, explain the working of Drop forging.

(ii) Compare extrusion and rolling process.

(OR)

(b) (i) Explain the bending terminology with help of a suitable sketch. (7)

(ii) Describe wire drawing and rod drawing. (7)

24. (a) (i) With help of a neat sketch explain the resistance spot welding. (10)

(ii) Compare TIG and MIG welding. (4)

(OR)

(b) (i) With help of neat sketch explain the friction welding. (10)

(ii) Distinguish between "Brazing" and "Soldering" processes. (4)

25. (a) (i) Sketch and explain injection moulding process. (10)

(ii) Write the advantages of transfer moulding process. (4)

(OR)

(b) (i) Sketch and explain blow moulding process for plastics. (7)

(ii) Discuss the any one method of welding of plastics. (7)

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