C 26879 (Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION MAY 2012

ME 09 404/PTME 09 403—CASTING AND JOINING

(2009 Admissions)

Time : Three Hours Maximum : 70 Marks

Part A

Answer **all** *questions.*

1. What are the mechanical allowances in casting ?
2. What is Plaster mould casting ?
3. What is investment casting ?
4. What is braze welding and give one application ?
5. What is adhesive bonding and name two adhesives ?

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

1. Explain about the design considerations of gating system in casting.
2. Explain about semisolid casting.
3. Explain the metallurgical effects of welding in detail.
4. Explain about the inspection and testing methods of welded joints.
5. Explain about torch brazing process and list out its advantages and disadvantages.
6. Explain about the capillarity action in detail.

(4 × 5 = 20 marks)

Part C

1 What is gating ? and explain about the different types of gating systems with a neat sketch.

2 Explain about the different types of patterns involved in casting and explain pattern allowance.

3 Explain the following in detail and give its advantages and disadvantages :

(a) Expended polystyrene process.

(b) Squeeze Casting.

4. Explain any *two* types of die casting machines and list out its advantages and disadvantages.
5. Explain Gas Tungsten Arc Welding with a neat diagram and give its advantages, disadvantages and applications.

Turn over

6. Explain Electroslag Welding with a neat diagram and give its advantages, disadvantages and applications.

7. Explain the different types of adhesives and list out its advantages, disadvantages and applications.

8. Explain the following :

   (a) Surface Energy and Contact Angle.

   (b) Metal/Ceramic joints and Ceramic/Ceramic joints.

(4 × 10 = 40 marks)