

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]
(2064)

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B. Tech 4th Semester Examination

Manufacturing Technology-I (O.S.)

ME-4002

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all selecting atleast one question from each section A, B, C & D of the question paper. All sub parts of section E is compulsory. All questions carry equal marks.

SECTION - A

1. What do you mean by term casting? Discuss the various steps involved in the preparation of casting by stating what points the casting designer should consider while designing a casting. State advantages and disadvantages. (20)
2. What is importance of gating system in casting? Discuss in details the basic elements of gating system with leveled diagram. What are design requirements of a gating system? (20)

SECTION - B

3. How does a permanent mould casting method differ from sand casting? What are the common materials used for making permanent mould? Describe step by step the method of casting in a permanent mould. State advantages and disadvantages of the process. (20)

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4. What do you mean by forging? Discuss the general design consideration for forging. Discuss with suitable diagrams the various operations which are generally performed in the shop. Name the common materials used for forging by stating their forging temperature. (20)

SECTION - C

5. What do you mean by extrusion? How does direct extrusion differs from indirect extrusion? Discuss the process of direct extrusion with the help of neat sketch. List the advantages, disadvantages and application of process. (20)
6. What do you mean by weldability? State the difference between autogenous and heterogeneous welding. Describe with the help of leveled diagram constructional features and working of metal inert gas (MIG) welding by stating the advantages, disadvantages and application of process. (20)

SECTION - D

7. What do you mean by high energy beam welding? Discuss electron beam welding with help of suitable diagram showing constructional details, working principle, advantage, limitations and applications of process. (20)
8. Discuss with the help of neat diagram the principle of flash welding stating advantages, limitations and industrial application of process. (20)

SECTION - E

9. (i) Why does misrun occurs during casting?
(ii) What are the functions of flux in welding electrode?
(iii) What is recrystallization temperature?
(iv) Differentiate between hot working and cold working of metals.

- (v) How an arc is obtained in arc welding?
- (vi) What do you mean by forgeability?
- (vii) Why there is a need of suitable arc length in arc welding?
- (viii) What is the most convenient position in welding? Explain with reason.
- (ix) What is color coding?
- (x) For which type of metals hot chamber die casting chamber is suitable. (2×10=20)