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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (ME) (2012 Onwards) (Sem.-3)

MANUFACTURING PROCESSES-I

Subject Code : BTME-305

M.Code : 59115

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**Answer briefly :**

1. Explain the selection criteria for manufacturing processes.
2. Enumerate the composition of green moulding sand.
3. Explain the functions of core prints and chaplets used in casting process.
4. Explain the working principle of induction furnace.
5. Enumerate design considerations of casting process.
6. Define Nucleation.
7. Explain the working principle of atomic hydrogen welding process.
8. Enumerate different Non-destructive testing methods?
9. Explain the working principle of brazing process.
10. Explain the significance of visual examination methods.



SECTION-B

11. Explain various types of cores used in casting process giving neat sketches.
12. Describe the working principle, applications and advantages of shell mould casting process giving neat sketch.
13. Explain the working of arc welding process giving a neat sketch. Also explain the relative merits and demerits of AC and DC welding processes.
14. Discuss various types of welding defects, their causes and remedies.
15. Explain the dye penetrant test for inspection of castings giving a neat sketch.

SECTION-C

16.
 - a) Explain metallurgical considerations in casting process.
 - b) Explain various elements of gating system giving a neat sketch.
17.
 - a) Explain the working principle, applications, advantages and limitations of friction stir welding process giving a neat sketch.
 - b) Why directional solidification is necessary? How it helps in the production of sound castings? What are the factors through which directional solidification of castings can be controlled?
18.
 - a) Describe the working principle, applications and advantages of TIG welding process giving a neat sketch.
 - b) Explain the working principle of Magnetic Particle inspection giving its advantages and disadvantages.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.