

24/5/13



B.E /B.Tech(Full-Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY2013
MATERIALS SCIENCE AND ENGINEERING
THIRD SEMSTER-REGULATION 2008

ML9201 FOUNDRY AND MACHINING

Time: 3Hrs

Max.Marks:100

Answer All Questions

Part –A (10x2=20 Marks)

6

1. What is the role of core in metal casting process?
2. Why a foundry is sand tested?
3. Why are gases in metals during casting harmful?
4. Mention some of the advantages of investment casting process.
5. While machining brittle material like Cast Iron what type of chip is produced?
6. List out the desirable characteristics of Cutting fluids.
7. What is boring?
8. What is meant by Reaming?
9. What do you mean by down milling?
10. Write short notes on gear shaving.

Part – B (5x16 = 80 Marks)

- 11 Describe the working of a double house planer with the help of a neat sketch.
12a What do you understand by pattern allowance? Discuss the various pattern allowances and their importance.

(OR)

- 12b With the help of a neat diagram explain CO₂ moulding process. Compare this process with green sand moulding process.

- 13a What is a cupola? Describe its main features and working.

(OR)

- 13b What is full mould casting process? Why is it also called expendable –pattern casting? What are the important applications of the process?

- 14a Using Merchant's circle diagram, derive the expression for estimating the cutting force during machining .Mention the assumptions made.

(OR)

- 14b Define the term machineability.Explain how it is influenced by the following:
(i)Work material microstructure.
(ii)Type of cut

(iii) Tool rake angle

15a Explain the following methods of taper turning in a lathe:
(i) By swiveling the compound rest.
(ii) By a taper turning attachment.

(OR)

15b Explain with neat sketch the feed mechanism used in a drilling machine.