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B.E (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

MATERIAL SCIENCE - III Semester

ML 287 / ML 9201 – FOUNDRY & MACHINING

(Regulation 2004/2008)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. State the application of core boxes.
2. Name the various pattern materials.
3. What is degassing?
4. State the advantages of investment casting.
5. Define the term tool life.
6. What are the wear patterns observed in single point tools?
7. What are the various methods available for taper turning in a lathe?
8. Define the tapping operation.
9. What are the various work holding devices used in milling?
10. Name the basic parts present in the shaper.

Part – B (5 x 16 = 80 marks)

11. (i) Explain the sand moulding methods. (8)
(ii) Explain the method of shell moulding process with neat sketch. (8)
 12. a) (i) What special precautions are to be taken in the casting of aluminum alloys? (4)
(ii) Discuss the metallurgical characteristics of cast metals with particular reference to (i) iron and (ii) steel (12)
- OR**
- b) Describe the centrifugal casting and true centrifugal casting methods with neat sketch. Write its advantages and applications. (16)
13. a) (i) Differentiate between the Orthogonal cutting and oblique cutting (6)
(ii) Explain the mechanics of chip formation using merchant circle. (10)

OR

- b) (i) Discuss the characteristics of cutting fluids used in metal cutting operations. (6)
(ii) Explain the single point cutting tool nomenclature with diagram. (10)

14. a) What is boring operation? Explain working of horizontal boring machine with sketch and write its applications. (16)

OR

- b) (i) Write short notes on Drilling, Reaming and Deep drilling. (6)
(ii) Explain the working of Universal drilling machine with sketch and write its advantage and applications. (10)

15. a) (i) Name the various types of sawing machines and Explain working of vertical sawing machine with diagram and write its advantages and applications. (8)
(ii) Explain the Gear Hobbing method with diagram and write its applications. (8)

OR

- b) What is Broaching and Name the various types of Broaching operation. Explain the working of horizontal Broaching machine with sketch and write its advantages and applications. (16)