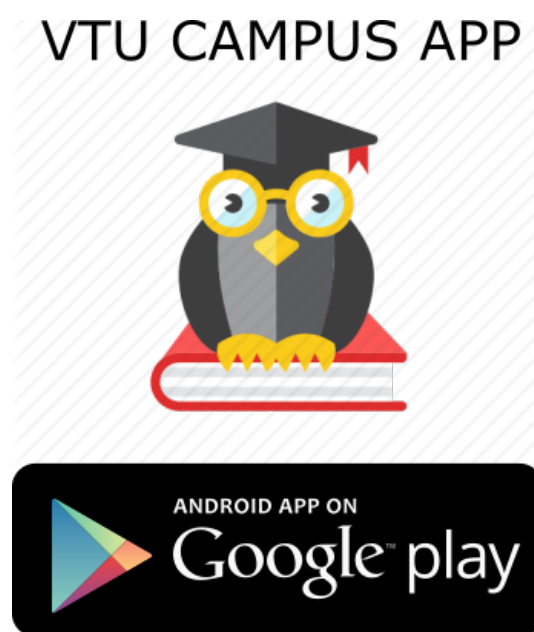


Metal Costing and Welding VTU CBCS Question Paper Set 2018



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CBCS Scheme

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15ME45A

Fourth Semester B.E. Degree Examination, June/July 2017 Metal Casting and Welding

Time: 3 hrs.

Max. Marks: 80

Note: Answer FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. List and briefly explain the steps involved in making sand casting. (08 Marks)
- b. Explain in detail various allowance given to pattern and reasons to provide the allowance. (08 Marks)

OR

- 2 a. List the types of moulding sand. Briefly explain the properties of moulding sand. (08 Marks)
- b. With a neat sketch, explain the working principle of Jolt and Squeeze machine. (08 Marks)

Module-2

- 3 a. With a neat sketch, explain the different zones present in CUPOLA FURNACE. (08 Marks)
- b. How do you classify the melting furnace? Draw a neat sketch and explain the working of gas fired pit furnace. (08 Marks)

OR

- 4 a. What is die casting? Draw a neat sketch and explain the Hot chamber die casting process. (08 Marks)
- b. With a neat sketch, explain centrifugal casting process. Mention merits and demerits. (08 Marks)

Module-3

- 5 a. What is nucleation? Explain types of nucleation with neat sketches. (08 Marks)
- b. What is degasification in liquid metals? Mention the methods explain any one. (08 Marks)

OR

- 6 a. What is Fettling? Mention the steps involved in Fettling. Explain with sketch of any two casting defects. (08 Marks)
- b. With a neat sketch, explain the principle of lift-out crucible furnace. (08 Marks)

Module-4

- 7 a. Sketch and explain TIG welding process. Mention its advantages and disadvantages. (08 Marks)
- b. Explain with a neat sketch, atomic hydrogen welding. (08 Marks)

OR

- 8 a. With a neat sketch, explain LASER beam welding and mention its advantages, disadvantages and limitations. (08 Marks)
- b. Sketch and explain seam welding. Mention advantages, disadvantages and applications. (08 Marks)

Module-5

- 9 a. What is heat affected zone (HAZ)? Explain the parameters affecting HAZ. (08 Marks)
- b. Write short notes on: i) Welding defects, ii) Residual stresses. (08 Marks)

OR

- 10 a. With neat sketch, explain Oxy-acetylene welding process. (08 Marks)
- b. What are different non-destructive testing (NDT) methods and explain with a neat sketch ultrasonic inspection method. (08 Marks)

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