

R09

Code No: 56063

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, December - 2018

FOUNDRY TECHNOLOGY

(Metallurgy and Materials Engineering)

Time: 3 hours

Max. Marks: 75

Answer any five questions

All questions carry equal marks

- 1.a) Define pattern and explain in detail with a neat sketch different types of pattern allowances.
b) Briefly explain properties of moulding sand. [10+5]
- 2.a) Explain with a neat sketch investment moulding with any two applications.
b) What are the advantages, disadvantages and application of CO₂ moulding? [9+6]
- 3.a) Briefly explain gravity die casting.
b) With a neat sketch explain Semi- Centrifugal casting. [8+7]
- 4.a) What is the basic function of a riser in a casting.
b) Explain with the neat sketch top and bottom gate. [5+10]
- 5.a) Discuss the methods employed to increase the riser efficiency and to promote directional solidification.
b) Explain nucleation and growth process of cast metals. [10+5]
- 6.a) With an appropriate illustration explain how the melting process takes place in various zones of cupola.
b) Explain the following with reference to black hearth malleable iron process.
i) Nucleation ii) First stage nucleation iii) Second stage nucleation. [7+8]
- 7.a) Explain with neat sketches the V-process details with its advantages and disadvantages.
b) With a neat sketch explain continuous casting process. [9+6]
8. Briefly explain the following casting defects.
a) Inclusions and sand defects
b) Gas defects
c) Contraction defects.
d) Shrinkage defect
e) Segregation. [15]

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