

B.E. Metallurgical and Material Engineering Third Year - Second Semester SUPPLEMENTARY EXAM 2022

FOUNDRY METALLURGY

Part-I

Full Marks 30

Answer any two questions, each question is of 15 marks

1. What is directional solidification and why it is important for sound casting ? Draw a diagram of a wheel casting and show the riser, runner and gating system. If the diameter of a steel wheel is D and weight W ; the weight of riser is w , what is the relationship between W and w . If the feeding distance of each riser is t , how many riser will be required. 5+5+5

2. Draw a diagram of a Cupola furnace and explain full operation to produce grey cast Iron, starting from raw materials input , reactions, and products. 15

3. Write Short Notes

- a. Steelmaking in Electric Arc furnace for foundry casting with Steel scrap
- b. Carbon Equivalent and its effect in producing grey cast iron
- c. Fe-Si , its need to add in Steel and Grey cast iron melting

8+4+3

Subject : Foundry Metallurgy

Examination : B-Met-Engg, 3rd Year, 2nd Semester, Supplementary Exam 2022

Metallurgical & Material Engineering Department

Ref No. : EX/Met/PC/B/T/321/2022 (S)

Part - II

Total Marks 35

Answer to the following questions.

Marks

1. Draw a neat sketch of Cupola

5

2. Write short notes on any three items of the following

10 X 3

- Patterns and their types
- Sand Testing Procedures in Sand Casting
- Mold, Core and their comparison
- Any three types of Casting Defects