

B.MECHANICAL 2ND YEAR 2ND SEMESTER EXAMINATION 2018

Subject: MANUFACTURING PROCESS

Time: 3 Hours

Full Marks : 100

**Answer any FIVE questions
Use pencil for any drawing work**

1. (a) What are the similarities and dissimilarities between a pattern and a casting? What are the different types of pattern materials used in foundry? Explain Match Plate pattern
3 + 3 + 4 = 10

(b) Why sand is used primarily as molding material? State at least two molding materials other than sand. How permeability and green compression strength related to the % clay content and % moisture content?
4 + 2 + 4 = 10
2. (a) Draw a neat sketch of a Feeding System of a casting of simple shape. What is pressurized and non-pressurized gating system? How it affects on the soundness of a casting?
4 + 4 + 4 = 12
(b) What is Riser or Feeder in casting? What is the use of it? What is the best shape of riser? How it affects on the overall yield of the casting?
2 + 2 + 2 + 2 = 8
3. (a) Draw a neat sketch of a Divided Blast Cupola or Coke Less Cupola with proper labeling and discuss its operation in brief. **OR** Discuss the operation of a Blast Furnace with suitable sketch. 10

(b) Explain the causes of following casting defects (give figures where applicable) with possible remedial actions, if any.

(i) Slag inclusion (ii) Blow hole (iii) Shrinkage (iv) Cold shut and Mis-run (v) Rough surface 10
4. (a) What is draught in rolling? Explain the effect of die angles with extrusion pressure in extrusion process with suitable explanations. 2 + 8 = 10

(b) What type of rolling mill would be suggested for cold rolling of mild steel? Draw the schematic diagram of suitable rolling stands for the purpose. 10

OR