

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)**

**CLASS: BE
BRANCH: PROD / MECH**

**SEMESTER: V/ADD
SESSION : MO/2018**

SUBJECT : PE5001 MANUFACTURING PROCESSES II

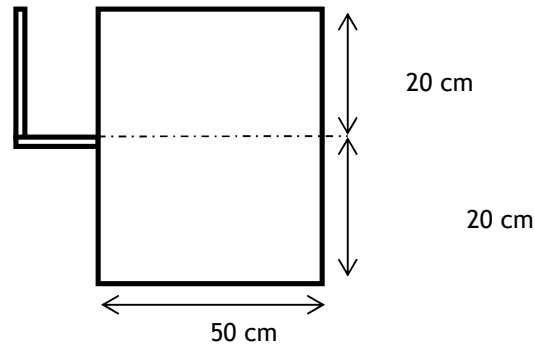
TIME: 1.5 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 30.
 2. Candidates may attempt for all 30 marks.
 3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. The missing data, if any, may be assumed suitably.
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- Q1 (a) A patterns used in casting process is not the exact replica of the product - Justify. [2]
(b) Sketch to define the followings: core and core prints, chaplet, chill [3]
- Q2 (a) What are the ingredients of molding sand? Give the composition. [2]
(b) Calculate filling time for the rectangular mold cavity as shown in figure. Assume gate area = 10 cm², Sprue height 20 cm, width of casting 50 cm. [3]



- Q3 (a) In spite of having better surface finish in “Die casting” method why jewelry making is carried out by other casting method? [2]
(b) What is ‘lost wax casting’? What are the steps involved in this process? [3]
- Q4 (a) Which casting method is suitable for casting of pipes? What are the limitations of that method? [2]
(b) Distinguish between hot chamber and cold chamber die casting processes. [3]
- Q5 (a) Maintenance of cupola furnace is a critical task - why? [2]
(b) State the zones of cupola furnace with their significance. [3]
- Q6 (a) What are the importance of fettling operations in casting process? [2]
(b) Define and sketch the casting defects: pin hole, misrun, cold shut [3]