

Please check that this question paper contains _____ questions and _____ printed pages within first ten minutes.

[Total No. of Questions: 09]

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Uni. Roll No.

Program: B.Tech

Semester 3rd

Name of Subject: Manufacturing processes

Subject Code: PCME-103

Paper ID : 16074

14-01-2022(M)

Time Allowed: 02 Hours

Max. Marks: 60

NOTE:

- 1) Each question is of 10 marks.
- 2) Attempt any six questions out of nine
- 3) Any missing data may be assumed appropriately

Q1. Enumerate the commonly used patterns in industry. Explain briefly with neat sketch cope and drag pattern, segmental pattern. Also indicate the types of allowances provided on these patterns.

Q2. a) What is the significance of directional solidification? Explain the briefly the factors which promote directional solidification.

b) What will be the solidification time for a 1100mm diameter and 33 mm thick casting of aluminium if the mould constant is 2.2 sec/min?

Q3. Explain the principle, equipment and constructional details for electric arc welding indicating relative merits and demerits.

Q4. What is Tungsten inert gas welding? Explain its principle with neat sketch. Describe its industrial applications along with advantages and disadvantages.

Q5. Sketch and describe the different types of rolls used in rolling mills. What is maximum permissible value of angle of Bite? What is condition of unaided entry of work-piece in rolls?

Q6. a) What is principle of metal cutting in press working? How clearance is provided in metal cutting dies. ?

b) Explain any three forging defects along with remedies. .

Q7. Explain the single point cutting tool with neat sketch along with various tool angles.

Q8. What is merchant force circle diagram? How it is helpful for the analysis of orthogonal cutting process?

Q9. Draw the neat sketch of Broach used in broaching process, explaining its various elements. How machining time is calculated in broaching?
