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Code No: 114DM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year II Semester Examinations, July/August - 2021
PRODUCTION TECHNOLOGY
(Mechanical Engineering)

Time: 3 hours Max. Marks: 75

Answer any five questions
All questions carry equal marks
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1. Explain the principle of investment casting process with neat sketch. Also discuss the advantages, limitations and applications of investment casting process. [15]

2.a) Illustrate and describe the process of Die casting.
b) Explain different types of allowances used in patterns making. [8+7]

3.a) The voltage-length characteristics of a DC arc is given by V=20+30L, where V is the arc voltage and L is the arc length in cm. Determine open circuit voltage and short circuit current for arc length ranging from 3 to 5 mm and current ranging from 200 to 400 Amp during welding operation. [8+7]
b) Explain the process of forge welding.

4.a) Compare and distinguish spot welding and projection welding.
b) Explain the principle of thermit welding with applications, advantages and limitations. [8+7]

5.a) Write the principle of operation along with application, advantages and limitations of explosive welding process.
b) What is magnetic arc blow? Mention the causes and remedies of for magnetic arc blow. [8+7]

6.a) Write the principle of operation along with applications, advantages and limitations of TIG welding process.
b) Discuss the possible defects and reasons for them in welding. [8+7]

7.a) Write a note on control of hot rolling mills.
b) A number of cold rolling passes are required in a two high rolling mill to reduce the thickness of a plate from 50mm to 20mm. the roll diameter of 700mm and the coefficient of friction at the roll work interface is 0.1. it is required that the draft in each pass must be the same. Assuming no front and back tensions, determine, the minimum no. of passes and the draft in each pass. [7+8]

8.a) What are the various equipment used in extrusion of metals? Briefly describe them.
b) Write the expression for determining the force required to produce an extrusion and discuss the effect of various parameters on the extruding force. [7+8]

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