Exam Date & Time: 23-Nov-2019 (09:00 AM - 12:00 PM)

MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING
III SEMESTER B.TECH (INDUSTRIAL PRODUCTION ENGINEERING) END SEMESTER EXAMINATIONS, NOV 2019

MANUFACTURING PROCESS ENGINEERING [MME 2157]

Marks: 50 **Duration: 180 mins.**

A

Answer all the questions.

Instructions to Candidates:
Answer ALL questions
Missing data may be suitably assumed

1) With a neat sketch explain the welding process which makes use of two non- consumable electrodes simultaneously (5)

A)

B) With a neat sketch explain shell mold casting process (3)

C) List and explain four types of sand molds (2)

2) With neat sketches explain indirect extrusion and board hammer forging process (5)

A)

B) List and explain different types of forging defects (3)

C) List the classification of the rolling mills based on the number of arrangement of rolls (2)

3) With a neat sketch explain laser beam welding process (5)

A)

B) Identify and sketch the operations carried out on a workpiece for (i) reducing length

(ii) producing serrations for gripping (3)

C) Estimate the machining time of a hollow workpiece of 40 mm in diameter and 150 mm in length which is to be turned all over in 3 passes. If approach length is 20 mm, over travel of 10 mm, feed 0.3 mm/rev and cutting speed 30 m/min (2)

4) With a neat sketch explain the radial drilling machine (3)

A)

B) Explain indexing and divide the periphery of the job into 87 divisions using plate 2 of B &S having 21,23,27,29,31,33 holes by compound indexing (3)

C) Discuss the centreless grinding machine operation with a neat sketch (4)

5) List out any four major differences between up milling and downmilling (2)

A)

B) With a neat sketch explain ultrasonic machining (4)

C) With neat sketch explain the fused deposition modelling method of rapid prototyping (4)

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