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B037414(037)

B. Tech. (Fourth Semester) Examination, April-May 2022

(AICTE Scheme)

(Mechanical Branch)

MANUFACTURING PROCESS

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : *Attempt all questions. Part (a) of each question is compulsory and carries 4 marks. Solve any* ***two*** *parts from part (b), (c) & (d) and carries 8 marks each.*

Unit-I

1. (a) Broadly classify manufacturing process.

(b) Define pattern. Explain types of pattern with neat sketch.

(c) Define allowancy and discuss the various types of allowances.

(d) What is core? What are the characteristics of a good core? Illustrate different types of core with their application.

Unit-II

2. (a) Define weldability and explain principle of welding.

(b) Briefly explain type of flames. Also explain flame characrateristics.

(c) Write short notes on :

(i) Atomic Hydrogen welding

(ii) Submerged arc welding

(d) Write short notes on :

(i) Differentiate forward and backward gas welding techniques

(ii) Types of welding electrodes

Unit-III

3. (a) What are various types of welding defects?

(b) Explain any two reistance welding process.

(c) Write short notes on :

(i) Ultrasonic welding

(ii) Thermit welding

(d) Briefly explain spot and seam welding process with their advantages disadvantages and application.

Unit-IV

4. (a) Name various parts of carriage in Lathe with diagram.

(b) Calculate the suitable gear train for cutting 10 mm pitch three start thread on lathe with a lead screw having 6·25 mm pitch.

(c) Explain the principle of operation of shaper with neat sketch.

(d) Explain the principle of operation of planner with neat sketch.

Unit-V

5. (a) Classify milling process. Differentiate broaching reaming and drilling.

(b) What is milling machine? Explain up milling and down milling with neat diagram and also write application of each.

(c) Explain different types of reamers with neat sketch.

(d) Determine the cutting time for cutting a 125 mm long keyway using HSS end-mill of 20 mm diameter having four cutting teeth. The depth of keyway is 4·5 mm. Feed per tooth is 0·1 mm and the cutting speed is 40 m/min. Assume approach and over travel distances half of the diameter of the cutter and a depth of 4·5 mm can be cut in one pass.