Reg No.:_____ Name:_____

0200RAT204052401

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fourth Semester B.Tech Degree (R,S) Examination May 2024 (2019 Scheme)

Course Code: RAT204

Course Name: MANUFACTURING PROCESSES

Max. Marks: 100 Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

		Marks
1	Briefly explain the wire drawing process.	3
2	Write any three limitations of casting process.	3
3	What is Gas Tungsten Arc Welding (GTAW) and how it works?	3
4	Write the steps involved in adhesive bonding.	3
5	State difference between turning and facing process.	3
6	Name different types of Column and Knee type Milling machine.	3
7	List the features of a CNC system.	3
8	Distinguish between absolute and incremental programming.	3
9	Write the working principle of Photo Chemical Milling.	3
10	Briefly explain the working principle of Abrasive Water Jet Machining (AWJM).	3

PART B

(Answer one full question from each module, each question carries 14 marks)

Module -1

11	a)	Write a short note on forging and its different types with suitable diagram.	10
	b)	Define extrusion process. Also write its working principle.	4
12	a)	Name four types of patterns and explain how it helps in casting.	8
	b)	What are the defects in sand casting? What are the major causes and how to avoid them?	6

Module -2

13	a)	Elaborate on oxyacetylene welding with neat sketch.	8
	b)	What is friction welding? Explain how it works?	6
14	a)	Explain any two types of electric resistance welding. Use suitable drawings.	10
	b)	Describe the soldering process and its specific advantages.	4

Module -3

15 a) Explain any four work holding devices used in Lathe with suitable drawings. 8

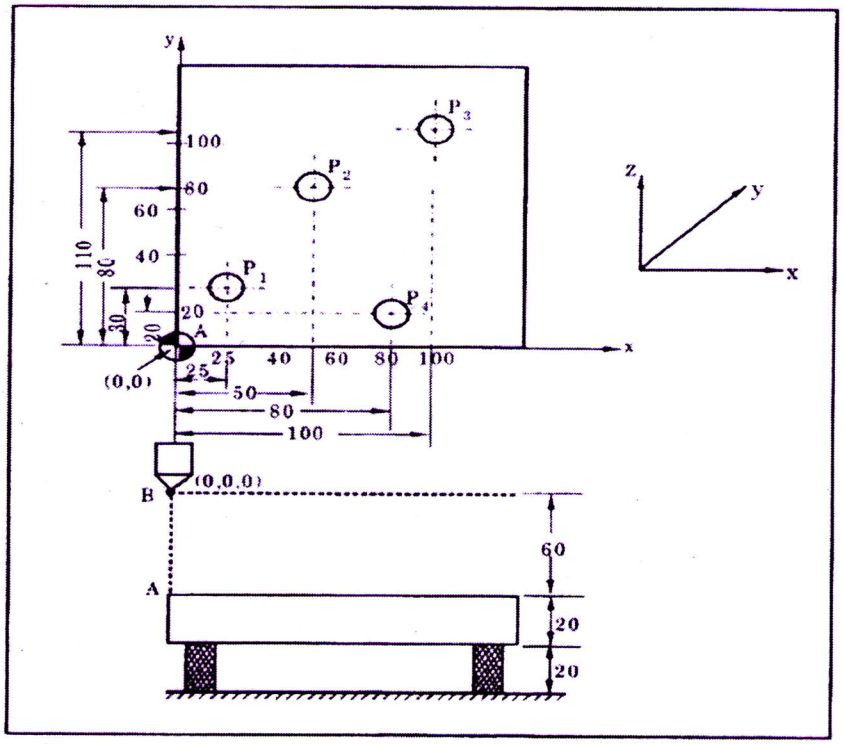
b) Describe Electro Chemical Grinding (ECG) operation with suitable diagram. 6

16 a) What is a milling cutter? Explain its types with neat sketch. 10

b) Define (i) Rough turning
(ii) Finish turning 4

Module -4

17 a) Write a part program to do drilling in the component as shown below. Assume spindle speed as 1000 RPM and feed as 150 mm/min. Consider Z position is 'zero' at 60 mm above the work-piece surface.



10

b) Write features and advantages of Automatic Tool Changer (ATC). 4

18 a) List the different G codes and M codes along with their function. 7

b) What are the four basic types of statements in the APT language? Explain any two types with examples. 7

Module -5

19 a) Explain the working of Electric Discharge Machining (EDM) with neat sketch. 8

b) Write a short note on LIGA process with suitable diagrams. 6

20 a) Explain Laser Beam Machining (LBM) with suitable diagram. Also write the advantages. 9

b) Define Stereo-lithography. Sketch and label its parts. 5

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