

Code No: P18MET10

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)

III B.TECH I SEMESTER END REGULAR EXAMINATIONS, DEC/JAN – 2022/23
METAL CUTTING & MACHINE TOOLS
(ME Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-A

Answer all the questions in Part-A (5X2=10M).

Q.No.	Questions	Marks	CO	KL
1.	a) Write different types of chips	[2M]	1	1
	b) Write short notes on collet chucks	[2M]	2	1
	c) Differentiate shaping and planning operations	[2M]	3	2
	d) Write the selection criteria of a grinding wheel	[2M]	4	1
	e) Classify Jigs and fixtures	[2M]	5	2

PART-B

Answer One Question from each UNIT (5X10=50M)

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	a) Explain the geometry and angles of a single point cutting tool with diagrams	[5M]	1	2
	b) Draw the Merchant's force diagram and derive the cutting forces	[5M]	1	3
OR				
3.	a) Write about the built up edge and its effects on machining	[5M]	1	2
	b) Discuss the role of cutting parameters on tool life	[5M]	1	2
UNIT-II				
4.	a) Explain the working principle of engine lathe machine with neat diagrams	[5M]	2	2
	b) Discuss work holding by different chucks in lathe machines	[5M]	2	2
OR				
5.	a) Write the classification of automatic lathe machines	[5M]	2	2
	b) Explain the processes i) taper turning and ii) thread cutting	[5M]	2	2
UNIT-III				
6.	a) Classify different milling cutters	[5M]	3	2
	b) Explain in detail the method of indexing in milling	[5M]	3	2
OR				
7.	a) What is the necessity of quick return mechanism in shaping? Explain	[5M]	3	2
	b) With a neat diagram explain jig boring machine	[5M]	3	3
UNIT-IV				
8.	a) Classify grinding machines based on application	[5M]	4	2
	b) Discuss tool and cutter grinding machine and its applications	[5M]	4	2
OR				
9.	a) Explain lapping, honing and broaching operations	[5M]	4	2
	b) Discuss the specifications of grinding wheel	[5M]	4	2
UNIT-V				



10.	a)	Classify Jigs and Fixtures	[5M]	5	2
	b)	What are the motion control mechanisms used in CNC machines? explain	[5M]	5	2
OR					
11.	a)	Write two examples of Jigs and Fixtures used in work holding operations	[5M]	5	2
	b)	Classify CNC machines and write the applications	[5M]	5	2
