

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026***Fourth Semester**Mechanical Engineering***ME3493 - Manufacturing Technology***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	List any four metal removal processes.	L1	1	2
2.	What are the factors responsible for built-up edge in cutting tools?	L1	1	2
3.	Distinguish between Capstan lathe and Turret lathe.	L2	2	2
4.	What is the purpose of a mandrel? How many types of mandrels is there in common use?	L2	2	2
5.	Write down any four operations performed by a shaper.	L3	3	2
6.	Define face milling.	L2	3	2
7.	State any four advantages of CNC machines.	L2	4	2
8.	What is meant by 'tool magazine' in a CNC machine?	L2	4	2
9.	List the methods of creating part programming.	L2	5	2
10.	Difference between incremental and absolute system in part programming.	L3	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a With reference to orthogonal cutting, explain the following terms shear stress, shear plane, shear strain, cutting ratio and shear angle with a suitable sketch.	L3	1	16
	Or			
	b i Explain different types of chips produced during machining with neat sketches.	L2	1	8
	ii Describe any four cutting tool materials used in metal cutting.	L3	1	8
12.	a List various of feed mechanism and explain briefly about tumbler gear reversing mechanism with a neat sketch.	L4	2	16
	Or			
	b i Briefly explain the working principle of Capstan and Turret lathes.	L4	2	8
	ii Describe the working of a typical single spindle automatic bar machine.	L4	2	8

13. a With a simple sketch, explain the working of the crank and slotted link quick return motion mechanism used in shaper. L3 3 16
- Or
- b i Discuss the centerless grinding process with a suitable sketch. L3 3 8
- ii Explain the twist drill nomenclature and define various elements of twist drill. L3 3 8
14. a Explain the working of a CNC machine tool with the help of a diagram. Also state advantages and limitations of CNC machines. L3 4 16
- Or
- b i What are the different control systems used in CNC and discuss in detail with a suitable block diagram. L4 4 8
- ii Discuss the different data input devices of NC machine tool. L4 4 8
15. a Illustrate in detail about the types of interpolations used in CNC systems with a suitable block diagram. L5 5 16
- Or
- b Prepare a part program to manufacture the given component shown in the below figure. L6 5 16

