

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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Fourth Semester B.E. Degree Examinations, July 2026

PRODUCTION TECHNOLOGY-II

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FIVE full questions choosing ONE full Question from each Module.
 2. Missing data, if any, may be suitably assumed

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<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO: PI)</u>
<u>Module-1</u>			
1.	a. Explain orthogonal and oblique cutting with neat sketches.	10	(2 :1: 1.2.1)
	b. Sketch and explain the single-point cutting tool nomenclature.	10	(2 :1: 1.2.1)
(OR)			
2.	a. Derive and explain the Merchant circle diagram and its applications.	10	(2 :1: 1.2.1)
	b. A seamless tubing 35 mm outside diameter is turned orthogonally on a lathe and the data is recorded as follows: Rake angle = 35°, Cutting speed = 15 m/min, Feed = 0.10 mm/rev, Length of continuous chip in one revolution = 50.72 mm, cutting force = 200 N, feed force = 18 N. calculate the co efficient of friction, shear angle, velocity of chip along tool face and chip thickness.	10	(3 :1: 1.3.1)
<u>Module-2</u>			
3.	a. Explain the parts of a lathe machine with neat sketches.	12	(2 :2: 1.2.1)
	b. Compare turret lathe and capstan lathe with applications.	08	(2 :2: 1.2.1)
(OR)			
4.	a. Sketch and explain horizontal milling machines.	10	(2 :2: 1.2.1)
	b. Explain with neat sketches the following drilling operations: drilling, boring, reaming, counter boring and counter sinking.	10	(2 :2: 1.2.1)
<u>Module-3</u>			
5.	a. Explain the types of tool wear and their mechanisms.	10	(2 :3: 1.2.1)
	b. Discuss the tool life equation and factors affecting tool life.	10	(2 :3: 1.2.1)
(OR)			
6.	a. Define machinability and explain factors affecting it.	10	(2 :3: 1.2.1)
	b. A certain cutting tool during rough turning gave a tool life of 1 hour at a cutting speed of 30 m/min. What will be the life of the tool when it is used at the same cutting speed for finish turning? Take n=0.125 for rough cut and n=0.1 for finish cut.	10	(2 :3: 1.3.1)

Note: (RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI- Performance Indicator)

Module-4

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| 7. | a. | Explain the cylindrical grinding process with sketch. | 10 | (2 :4: 1.2.1) |
| | b. | Describe honing, lapping, galvanizing, anodizing and polishing processes with suitable sketches. | 10 | (2 :4: 1.2.1) |

(OR)

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| 8. | a. | Explain abrasives and types of abrasives used in finishing. | 06 | (2 :4: 1.2.1) |
| | b. | With a neat sketch explain the centreless grinding process. | 10 | (2 :4: 1.2.1) |
| | c. | Explain the importance of surface finishing process. | 04 | (2 :4: 1.2.1) |

Module-5

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| 9. | a. | Explain the need for additive manufacturing. | 05 | (2 :5: 1.2.1) |
| | b. | Sketch and explain any 2 types fixtures used in production. | 10 | (2 :5: 1.2.1) |
| | c. | Explain the essential features of jigs and fixtures. | 05 | (2 :5: 1.2.1) |

(OR)

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| 10. | a. | Discuss the concept of Stereolithography process in additive manufacturing. | 10 | (2 :5: 1.2.1) |
| | b. | Compare additive manufacturing and CNC machining, including applications. | 10 | (2 :5: 1.2.1) |