



R20 Regulation

Subject code: 3P6CC

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

**B.Tech VI Semester Supplementary Examinations, February 2024**

## MACHINE TOOLS AND METROLOGY

(Mechanical Engineering)

Maximum Marks: 70

Date:20.02.2024 Duration: 3 hours

- Note:**
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

### Part-A

All the following questions carry equal marks		(10x2M=20 Marks)	CO	Bloom Tx
1	How is a built up edge formed?		CO1	L2
2	Define the term cutting speed.		CO1	L1
3	List the operations performed in a drilling machine.		CO2	L1
4	Mention the quick return mechanisms employed in shaper.		CO2	L2
5	Give the reason for using a coolant in grinding work.		CO3	L2
6	What is indexing in milling machines?		CO3	L2
7	Why are sine bars not used for measuring large angles?		CO4	L2
8	Compare tolerance and allowance.		CO4	L3
9	Mention any four advantages of mechanical comparators.		CO5	L2
10	List out any two alignment tests for lathe.		CO5	L2

### Part-B

Answer All the following questions.		(5X10M=50Marks)		
11	a) Describe the work holding devices used in a lathe. (7) b) List the specifications of a lathe. (3)		CO1	L2
	OR			
12	Describe the mechanism of orthogonal cutting and explain the construction of Merchant's force diagram. (10)		CO1	L3
13	Discuss the various operations performed in a shaping machine. (10)		CO2	L2
	OR			
14	Draw and explain the constructional features of a drilling machine. (10)		CO2	L2
15	Describe the features of a milling cutter. Add a note on compound indexing. (10)		CO3	L2
	OR			
16	Discuss the types of abrasives and bonds used in grinding. (10)		CO3	L2
17	a) Describe the three main types of fits. (5) b) Give a brief account of slip gauges and safety precautions to be followed in the use of slip gauge blocks. (5)		CO4	L2

	OR		
18	Explain the construction and use of Vernier bevel protractor with a neat sketch. (10)	CO4	L2
19	Discuss the various parts of a Tool maker's microscopic and describe its working with a sketch. (10)	CO5	L3
	OR		
20	Give a brief account of constant chord method and base tangent method for measuring the gear tooth thickness. (10)	CO5	L2