



R20 Regulation

Subject code: 3P6CC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, May 2025

MACHINE TOOLS AND METROLOGY

(ME)

Maximum Marks: 70

Date: 20.06.2025

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.
 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)		Marks	CO	BTL
1	How do you define tool life?	2M	1	L1
2	What is the principle of working of a lathe	2M	1	L1
3	How the planer differs from a shaper?	2M	2	L1
4	Define lapping.	2M	2	L1
5	Explain the need for the use of tolerance	2M	3	L1
6	Differentiate between hole basis and shaft basis system	2M	3	L1
7	Differentiate between precision and accuracy	2M	4	L1
8	Give classification of measuring instruments	2M	4	L1
9	What are the Tool makers microscope uses	2M	5	L1
10	What are measurement standards?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain briefly about formation of chip.	10M	1	L2
OR				
12	What are the differences between orthogonal cutting and oblique cutting?	10M	1	L2
13	Explain the construction of Merchant Circle diagram.	10M	2	L2
OR				
14	Explain the construction and working principle of shaper.	10M	2	L2
15	A C.I. plate measuring 300mm × 100mm × 40mm is to be rough shaped along its wider face. Calculate the machining time taking approach = 25mm, over travel = 25mm, cutting speed = 12m/min, return speed = 20m/min, allowance on either side of the plate width = 5mm and feed per cycle = 1mm	10M	3	L2
OR				
16	Explain in detail with neat sketches horizontal type of boring machines.	10M	3	L2
17	a) Explain the Taylor's principle applied in limits. b) Explain the principle of optical flat and auto collimator.	5M 5M	4	L2
OR				
18	a) Explain Hole basis system and shaft basis system. b) Describe the measuring method by using sine bar.	5M 5M	4	L2
19	Explain in detail with neat sketches horizontal type of boring machines.	10M	5	L2
OR				
20	Describe the measuring methods by using sine bar.	10M	5	L2

