



R20 Regulation *Subject code:3P6CC*
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech VI Semester Regular Examinations, June/July 2023
MACHINE TOOLS AND METROLOGY
(Mechanical Engineering)

Maximum Marks: 70

Date:27.06.2023 Duration: 3 hours

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Give example for single point and multi point cutting tool.
- 2 Define the term feed.
- 3 List the types of boring machine.
- 4 Give the specifications of a planing machine
- 5 What is truing of grinding wheels?
- 6 Write the different methods of indexing in milling machines.
- 7 List any four angle measuring instruments.
- 8 What is the use of limit gauge?
- 9 List the advantages of electrical and electronic comparators.
- 10 List out any two alignment tests for drilling machine.

Part-B

Answer All the following questions.

(10MX 5=50Marks)

- 11 a) Draw a single point cutting tool and mark the important angles. (4 marks)
b) Describe the various types of chips produced in metal cutting. (6 marks)
OR
- 12 Describe the essential parts of a Capstan lathe with the necessary diagram. (10 marks)
- 13 a) Draw a twist drill and mark the salient features and angles. (5 marks)
b) Write short notes on the types of boring machines. (5 marks)
OR
- 14 a) Compare a planer with a shaper. (5 marks)
b) Write a short note on jig boring machine with a neat diagram. (5 marks)
- 15 With the help of a line diagram, explain the constructional features of horizontal milling machine. (10 marks)
OR
- 16 a) Which materials are used in the manufacture of grinding wheels? What properties do they impart to the wheel? (5 marks)
b) What are the advantages and disadvantages of the different bonds used in grinding wheel? (5 marks)
- 17 a) Discuss the construction and working of an outside micrometer. (7 marks)
b) Differentiate between shaft based and hole based systems. (3 marks)
OR
- 18 State and explain the Taylor's principle of gauge design with neat sketch of Plug gauge and Snap gauges. (10 marks)
- 19 Discuss the working principle of Reed type mechanical comparator with a sketch. List its advantages and limitations. (10 marks)
OR
- 20 Explain the one wire and two wire method for measuring effective diameter of screw thread. (10 marks)