

Roll No.....

Total No. of Printed Pages: 1

Total No. of Questions: [09]

B. Tech (ME) (Semester – 5th)
TOOL DESIGN
Subject Code: BMEE1563
Paper ID: [112322]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a) Define the phenomena of dynamics of cutting forces.
- b) Write the materials used for manufacture spindles.
- c) Explain the tool layout
- d) Define the tool chatter.
- e) What is periodic motion?
- f) Write types of lathe fixtures.
- g) Discuss the reversing motion.
- h) Explain the concept of speed and feed in machine tools.
- i) What are the functions of guide ways in machine tools?
- j) Name the bearing materials.

Section – B

(5 marks each)

Q2. Classify and explain the Air lubricated bearings.

Q3. Discuss the kinematics or gearing diagram of Lathe.

Q4. Explain the methods to determine transmission ratios for drives.

Q5. Explain the selection of materials, constructions of bed and columns.

Q6. Explain how machine tools are classified?

Section – C

(10 marks each)

Q7. Explain the design criteria of machine tool structures.

Q8. Discuss the concept of dynamic and elastic system of Machine tools.

Q9. Write short notes on the following:

- (a) Remote control safety devices
- (b) Machine tool drives for rectilinear motion