

Total No. of Questions : 4]

SEAT No. :

P5006

[6187]-406

[Total No. of Pages : 1

**T.E. (Mechanical / Automobile Engg.) (Insem)**  
**MACHINING SCIENCE AND TECHNOLOGY**  
**(2019 Pattern) (Semester - I) (Elective - I) (302045 B)**

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Solve Q.1 or Q.2, Q.3 or Q.4.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Assume suitable data, if necessary.
- 4) Figures to the right indicate full marks.
- 5) Use of non-programmable electronic calculator is allowed.

- Q1)** a) Define tool life. Explain in details factors affecting the tool life during machining process. [5]
- b) What is tool wear in manufacturing process? Explain in details tool wear mechanisms which are responsible for causing wear of cutting tool during operation. [6]
- c) Draw neat sketch of single point cutting tool indicating its complete geometry. [4]

OR

- Q2)** a) What is machinability and machinability index? Explain different factors affecting machinability. [5]
- b) Discuss the various types of chip breakers used during metal cutting, along with neat sketches. [6]
- c) The tool life of a turning tool obtained 40 minutes and 25 minutes at cutting speed of 80 m/min and 100 m/min respectively. Determine the tool life for a cutting speed of 40 m/min. [4]

- Q3)** a) Explain thread milling process with neat sketch. [5]
- b) What is indexing in gear cutting? Explain compound indexing with suitable example. [6]
- c) What is gear hobbing? Explain gear hobbing principle. [4]

OR

- Q4)** a) What are the advantages of producing thread by grinding? [5]
- b) Explain with neat sketch the process of helical gear cutting. [6]
- c) Write a short note on gear Inspection. [4]

