

Total No. of Questions : 8]

SEAT No. :

PA-1533

[Total No. of Pages : 2

[5926]-153

T.E. (Mechanical/Automobile)

MACHINING SCIENCE & TECHNOLOGY

(2019 Pattern) (Semester - I) (302045B) (Elective - I)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*
- 5) *Use of electronic pocket calculator IS : 800-2007 and steel table allowed.*
- 6) *Use of cell phone is prohibited in the examination hall.*

Q1) a) What is grinding wheel? Draw figure of various grinding wheel shapes used with names and applications. **[10]**

b) Explain the burnishing process with neat sketch and state its applications. **[8]**

OR

Q2) a) What are abrasives? Explain the common types of abrasives used with their properties. **[10]**

b) Explain the nomenclature of the Grinding wheel and describe the following 25 – C – 70 – M – 9 – V – 23. **[8]**

Q3) a) Define jigs and fixtures. State its advantages and limitations. **[5]**

b) State various types of clamping devices used in jigs and fixtures and explain any two with neat sketch. **[12]**

OR

Q4) a) Describe the concept of degree of freedom and explain the six point location principle with help of suitable sketches. **[12]**

b) State various types of jigs and explain channel jig with neat sketch. **[5]**

P.T.O.

Q5) a) How to determine most economical process for manufacture of product. [8]

b) Prepare the process planning sheet to manufacture a small diameter hollow piston pin from seamless tube. [10]

OR

Q6) a) Define process planning and discuss purpose and steps involved in process planning. [8]

b) Prepare a process chart for manufacture of bushes in moderate quantity of 60 per batch. [10]

Q7) a) Explain subroutine and Do loop using Canned cycle. [5]

b) Write a program to machine 40mm diameter stock to $\phi 30$ mm for a length of 30mm. [12]

OR

Q8) a) Explain the part program in CNC with steps involved in developing it. [5]

b) Write a program for milling $\phi 40$ mm and 6 mm deep circular pocket in a 75 mm \times 90 mm billet of 30 mm thickness using canned cycle. [12]

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