

Total No. of Questions : 6]

P17

SEAT No. :

[Total No. of Pages : 2

**TE/Insem./APR-20  
T.E. (Mechanical)**

**302051: MANUFACTURING PROCESS - II  
(2015 Pattern) (Semester - II)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.
- 2) Figures to the right indicate full marks.
- 3) Use of electronic pocket calculator is allowed.
- 4) Assume suitable data, if necessary.

**Q1)** a) A 300 mm diameter bar is turned as 45 rev/min with depth of cut of 2mm and feed of 0.3 mm/rev. The forces measured at the cutting tool point are -cutting force 1850 N and feed force = 450 N. Calculate

- i) Power consumption and
  - ii) Specific cutting energy [6]
- b) List types of chips and Explain the cutting conditions for chip type formation. [4]

OR

**Q2)** a) The tool life of high speed steel (HSS) tool and carbide tool have the same tool life of 60 minutes at a cutting speed of 75 m/min. the exponent of tool life in Taylor's equation "n" is 0.15 for HSS, while it is 0.2 for carbide tool. Compare tool life for the two tools at a speed of 90 m/min. [6]

b) With help of neat sketch, explain single point cutting tool geometry. [4]

**Q3)** a) Explain construction & working of radial drilling machine with block diagram. Show the different motion of drill head. [6]

b) A slot is to be milled by a side and face milling cutter with 10 teeth and of diameter 150 mm the cutting speed is 50m/min and feed is 0.25 mm/tooth. Determine the table fed in mm/min. [4]

OR

P.T.O.

**Q4)** a) With neat sketch explain any three milling operations. [6]

b) Find the time required to drill 4 holes in a cast iron flange each of 2 cm depth, if the hole diameter is 2 cm. Assume cutting speed as 21.9 m/min. And feed as 0.02 cm/rev. [4]

**Q5)** a) Draw the various shapes of grinding wheel shapes used with its names & applications. [6]

b) Differentiate between honing and lapping. [4]

OR

**Q6)** A) Explain the meaning of Grinding wheel signature with suitable example. [6]  
B) Answer the followings. [4]

i) Which of the followings is very hard grade?

- a) T-Z,
- b) L-O,
- c) G-K,
- d) A-E

ii) These two are known as natural abrasives.

- a) Granite
- b) Magnetite
- c) Corundum
- d) Ferrite

iii) \_\_\_\_\_ is a type of artificial abrasive.

- a) Sand stone
- b) Emery
- c) Corundum
- d) Alumina oxide

iv) Grinding is also known as :

- a) Lapping
- b) Flaming
- c) Abrasive machining
- d) Reaming

