

Total No. of Questions : 10]

SEAT No. :

**P3483**

**[5560]-120**

[Total No. of Pages : 3

**T.E. (Mechanical)**

**MANUFACTURING PROCESS - II**

**(2012 Course) (Semester - II) (End Semester)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.*
- 2) *Figures to the right indicate full marks.*
- 3) *Use of electronic pocket calculator is allowed.*
- 4) *Assume suitable data, if necessary.*

**Q1) a)** Explain following grinding wheel nomenclature. **[6]**

S-D-54-L-4-R-12

- b) Determine machining time required to drill a hole of 20mm diameter and 60mm length when feed is 0.2mm/rev and speed is 20m/min. Assume approach and over travel as 5mm each. **[6]**

OR

**Q2) a)** Determine indexing movement required for making 69 teeth on a gear blank using compound indexing. **[6]**

Plate - 1: 15, 16, 17, 18, 19, 20

Plate- 2: 21, 23, 27, 29, 31, 33

Plate - 3: 37, 39, 41, 43, 47, 49

- b) Differentiate between honing and lapping process. **[6]**

**Q3) a)** Explain flank and crater wear with neat sketches. **[4]**

- b) Taylor's tool life equation for machining C-40 steel  $VT^n = C$ . Feed is 0.2mm/rev. **[4]**

V(m/min)	25	35
T(min)	90	20

Determine  $n$  and  $C$ . 2. Recommend cutting speed for 60 minutes tool life.

OR

**P.T.O.**

**Q4)** a) Explain any two types of chips with neat sketch and mentioning their favourable conditions. [4]

b) Explain Merchant's force circle with neat sketch. [4]

**Q5)** a) Explain AJM process with its advantages, limitations and applications. [8]

b) Explain variable process parameters in USM process with their effect on MRR. [8]

OR

**Q6)** a) Explain with a neat sketch ECM process. [8]

b) Explain with a neat sketch LBM process. Also comment on applications and limitations. [8]

**Q7)** a) Differentiate between NC and CNC machines. [5]

b) Explain following codes: [6]

G02, M02, G84, M06

c) What is Word address format? Explain with an example. [5]

OR

**Q8)** a) Differentiate between open and closed loop system. [6]

b) Explain DNC with block diagram. [6]

c) Explain with a neat sketch Automatic tool changer. [4]

- Q9) a) Explain with a neat sketch diamond pin locator. [4]**
- b) Explain 3-2-1 principle for location. [6]**
- c) Design and draw a drilling jig to produce 50mm diameter hole in the given component. [8]**

OR

