

# MANUFACTURING TECHNOLOGY – II

3 Hours |

[ Max. Marks : 100 ]

- Instructions : (i) Section – I is compulsory.  
(ii) Answer any two full questions each from Sections – II, III & IV.

## SECTION – I

Fill in the blanks :

5 × 10 = 50

- (i) Cutting speed is uniform in \_\_\_\_\_ shaper.
- (ii) Grade indicates \_\_\_\_\_ of the bond in grinding wheel.
- (iii) In Up-milling the cutter rotates \_\_\_\_\_ the work feed.
- (iv) EDM means \_\_\_\_\_.
- (v) Heating the compact material in powder metallurgy is called \_\_\_\_\_.

What are the purposes of cutting fluids and coolants ?

## SECTION – II

Explain with a neat sketch open and cross belt drive.

Differentiate between shaper and planer.

Write the specification of slotter.

Explain with a neat sketch plain cylindrical grinding machine.

How would you classify the grinding machines ?

What is (i) Loading of wheels ?

(ii) Dressing of wheels ?

[Turn over]

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4. (a) Explain with a neat sketch crank and slotted link mechanism.  
(b) Explain Grit and structure corresponds to grinding wheels.  
(c) List the various types of bonds used in grinding wheels.

### SECTION - III

5. (a) Explain with a neat sketch column and knee type milling machine.  
(b) Write the classification of standard milling cutters.  
(c) Explain down-milling process.
6. (a) Explain gear hobbing.  
(b) Find the index crank movement required to mill 30 teeth on a spur wheel in the simple indexing method.  
(c) Write the classification of non-traditional machining processes.
7. (a) Explain Ultrasonic machining with schematic diagram.  
(b) What are the advantages and dis-advantages of EDM ?  
(c) What are the demerits of Laser Beam Machining ?

### SECTION - IV

8. (a) Define jigs and fixtures. Differentiate them.  
(b) Write the sketch and application of the Box Jig.  
(c) What are the Advantages of jigs and fixtures ?
9. (a) Sketch and explain injection moulding process.  
(b) Explain principle of calendaring.  
(c) Briefly explain types of plastics.