

Roll No.

Total Pages : 3

524201

May 2024

M.Tech. (MTA) II-SEMESTER

Manufacturing Technology (MMTA-201)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*
4. *Geometric box instruments / calculator permitted.*

PART-A

1. (a) What are the cutting fluids used in a lathe machine?
(1.5)
- (b) Which type of surface is produced by facing operation?
(1.5)
- (c) Brief about the milling machine is normally used for very high production rates.
(1.5)
- (d) Write the name of the non-conventional machining process that gives the best surface finish.
(1.5)
- (e) What is the helix angle of the drill?
(1.5)

524201/40/111/177

[P.T.O.]

- (f) Write the name of the preferred abrasives for grinding nonferrous materials. (1.5)
- (g) What is the use of the boring operation? (1.5)
- (h) What is the purpose of a honing tool? (1.5)
- (i) Describe in brief electrochemical machining (ECM)? (1.5)
- (j) What is the basic principle of plasma arc machining? (1.5)

PART-B

- 2. (a) Explain the mechanism of chip formation with a neat diagram. (10)
- (b) How do you define tool life? (5)
- 3. (a) What do you understand by tool signature? (5)
- (b) What are the design considerations for a single point cutting tool? (10)
- 4. What is broaching? What are its advantages? What are the principle types of broaching machines? (15)
- 5. (a) Describe the (i) core drill and (ii) multidiameter drill. (5)
- (b) Explain the working process of EDM with neat diagram. (10)

- 6. (a) Explain the importance of the dressing of abrasive tools on a grinding wheel. (10)
- (b) What are the various factors to be considered in the selection of a grinding wheel? (5)
- 7. Explain the working process of EDM. What are the advantages and disadvantages of the electrical discharge machining (EDM) process? When will you use reverse polarity in the EDM process, and what are its advantages and disadvantages? (15)