

17208(N)

B. Tech 5th Semester Examination

Manufacturing Technology-II (CBS)

ME-502

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, select one question from each section A, B, C, D of paper and section-E is compulsory.

SECTION - A

1. How many types of chips are formed in metal cutting? What factors are responsible for formation of these different types of chips? What is built up edge? (12)
2. Draw a Merchant's circle diagram and derive an expression to show relationships among the different forces acting on the cutting tool and different parameters involved in metal cutting. (12)

SECTION - B

3. (a) What are the different methods of gear manufacturing? Give a brief account of each of them. (6)
(b) What is gear hobbing? Explain the principle of gear hobbing process. (6)
4. (a) What do you understand by machinability? By which parameters it is generally influenced? (6)
(b) What do you understand from the term tool life as applicable to metal cutting? In what terms is it expressed? (6)

SECTION - C

5. (a) What essential factors will you consider while designing a Jig or a Fixture? (6)
(b) What are locating devices or locators? Which factors govern the selection of a locator? (6)
6. (a) What basic principles involved in designing a clamping device for a Jig or Fixture? (6)
(b) Describe in brief the common shearing operations performed on presses. (6)

SECTION - D

7. (a) What is Laser? Explain the working principle of Laser beam machining. Also list the product applications of LBM. (6)
(b) Discuss the mechanics of honing processes. (6)
8. (a) Explain the terms speed, feed and depth of cut as applicable to grinding work. (6)
(b) What are the requirements of tool material for EDM? Name the common tool materials; also write advantages and disadvantages and product applications of EDM. (6)

SECTION - E

9. (a) What is the function of burnishing teeth on broaches? (6)
(b) List some abrasive powders and liquid carriers used in USM. (6)
(c) What is flank wear? (6)
(d) Define grinding ratio. (6)
(e) Give the advantages of C.B.N as cutting tool material (6)
(f) Defining sawing operation. (2×6=12)