

(3 Hours)

Total Marks: 80

Note:

1. **Question No. 1 is compulsory.**
2. Attempt any **THREE** out of the remaining **FIVE** questions.
3. Assume suitable data if necessary.

- Q. 1.** Write short notes on **any FOUR** questions. (20)
- (a) Application methods of cutting fluids
 - (b) Specification of surface finish
 - (c) Components of product cost in metal cutting
 - (d) ORS tool designation
 - (e) Lathe dynamometer
- Q. 2.** (a) Explain mechanics of metal cutting operation (10)
- (b) What are the methods of measurements of cutting temperatures. (10)
- Q. 3.** (a) Derive the original merchant equation along with assumption. (10)
- (b) Describe ceramics and carbides as cutting tool materials. (10)
- Q. 4.** (a) Discuss the effect of cutting parameter on tool life. (10)
- (b) Explain design features of broach tool. (10)
- Q. 5.** (a) Explain design of tool shank for rectangular section (10)
- (b) Explain design features of circular form tool. (10)
- Q. 6.** Write short notes on: (20)
- (a) Throw away tip type tools
 - (b) Name the factor that contribute flank wear
 - (c) Dynamometer requirements
 - (d) Classification of Form tool.
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