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Name

Reg. No.

**FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, DECEMBER 2007**

ME 04 505—METAL CUTTING AND FORMING

(2004 admissions)

Maximum : 100 Marks

Time : Three Hours

Answer all questions.

Part A

- I. (a) What do you understand by the terms limits, fits and tolerances ?
(b) How will you classify the automats ?
(c) Discuss the various types of cutting fluids.
(d) Name the various cutting tool material and their essential requirements.
(e) Differentiate between a compound die and combination die.
(f) Explain the working principle of Abrasive Jet machining process.
(g) What is the basic principle of jigs and fixtures ?
(h) What are the principle features of ultrasonic machining process ?

(8 × 5 = 40 marks)

Part B

- II. (a) With neat sketches explain the tool layout of an automat.

Or

- (b) Briefly explain how optical measurement is used in the manufacture of gears.

- III. (a) Discuss the various forces encountered in metal cutting.

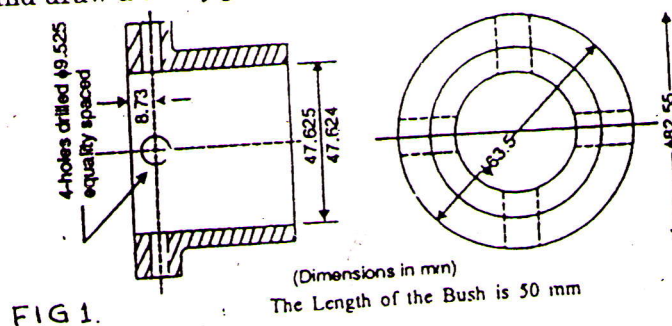
Or

- (b) Enumerate the factors on which tool wear and tool life depend.

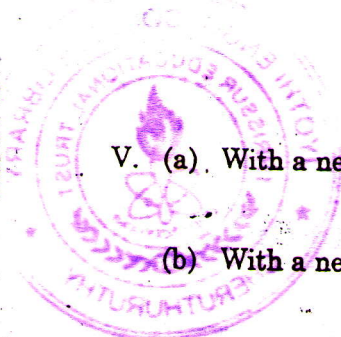
- IV. (a) Sketch a sectional view of a blanking die and label on it clearance, straightness and angular clearance.

Or

- (b) Design and draw a drill jig to drill the holes in the component given in Fig.1.



Turn over



V. (a) With a neat sketch explain the working of Ultrasonic Machining process.

Or

(b) With a neat sketch explain the working of Plasma arc machining process.