

**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2010**

ME 04 705 (B)—TOOL ENGINEERING AND DESIGN

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

- I. (a) What are the important factors should be considered in design of tool holders ?
 (b) What is vibration ? What are the effects of vibration in matching tools ?
 (c) What is power press ? Mention the advantages of power presses.
 (d) Explain different types of work holding devices.
 (e) Explain the principle of clamping.
 (f) What are the important features of milling fixtures ?
 (g) What are the advantages of guide bushings ?
 (h) What are the design factors should be considered in reaming jigs ?

(8 × 5 = 40 marks)

Part B

- II. (a) Calculate (i) the metal removal rate and ; (ii) the specific cutting pressure for the following cutting conditions :—

Work material	:	Steel
Ultimate tensile strength	:	980 MN/m ²
Tool material	:	HSS
Depth of cut	:	1.6 mm
Feed	:	0.8 mm/revolution
cutting speed	:	5.5 m/minute
Power consumed	:	0.67 kW

(15 marks)

Or

- (b) Explain the different types of form tools. (15 marks)
 III. (a) Discuss the general consideration in designing of drawing dies. (15 marks)

Or

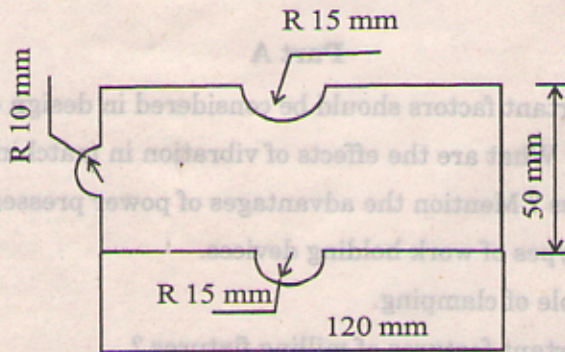
- (b) Explain about compound and progressive dies. (15 marks)

Turn over

- IV. (a) (i) Explain the elements of milling fixtures. (10 marks)
 (ii) Explain the principle of concentric location. (5 marks)

Or

- (b) Design and sketch a milling fixture for the following components.



- V. (a) Design and draw indexing jig and mention its elements. (15 marks)

Or

- (b) Describe the general design consideration of a drill jig. (15 marks)

[4 × 15 = 60 marks]

(15 marks)

Or

(15 marks)

(15 marks)

Or

(15 marks)

Turn over