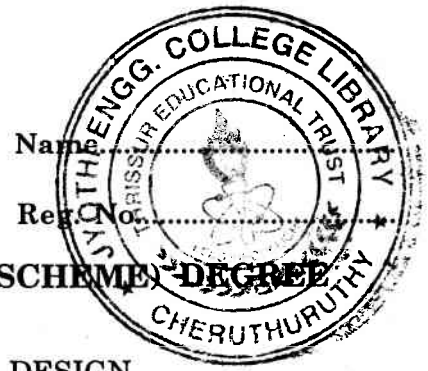


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**SIXTH SEMESTER B.TECH. [ENGINEERING] (09 SCHEME) DEGREE
EXAMINATION, APRIL 2016**

ME/AN 09 L05—TOOL ENGINEERING AND DESIGN

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

1. What are the classifications of multi point cutting tool ?
2. With a neat sketch explain the use of slip bush ?
3. Explain about feed system.
4. What is mean by toll forces ?
5. What are the basic rules for location ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Mention any *four* features made on milling fixture.
7. What conditions are unique to grinding process that must be taken into consideration while designing broaching fixtures ?
8. What is meant by penetration in sheet metal piercing and blanking and explain it ?
9. Explain about the parting surfaces.
10. Describe in detail the principle of clamping.
11. Distinguish between turn over jig and box jig with sketches ?

(4 × 5 = 20 marks)

Part C

Answer all questions.

12. (a) Explain the nomenclature of twist drill with a neat sketch. (10 marks)

Or

- (b) (i) Explain the different types of chips formed during metal cutting operations with neat sketch.

(5 marks)

- (ii) Explain the factors influencing the production of chips.

(5 marks)

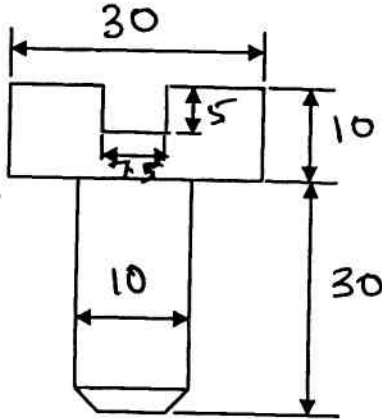
Turn over

13. (a) Explain forward and backward extrusion and their applications with neat sketch.

(10 marks)

Or

- (b) Sketch and design a progressive die to make a steel washer 30 mm outside diameter and 15 mm hole, from 1.6 mm thick steel sheet the ultimate shear strength of the material is 320 N/mm^2 .



(10 marks)

14. (a) Explain the various Injection moulding machine with neat sketch.

(10 marks)

Or

- (b) Explain the following :

- (a) Runner and Gate.
- (b) Riser.
- (c) Mould tools.

(10 marks)

15. (a) (i) Explain the Design of a work holder for tapping operation.

(5 marks)

- (ii) Sketch and Explain the use of :

- (1) Equalizing clamp.
- (2) Toggle clamp.

(5 marks)

Or

- (b) Explain the various fixture components and design the fixtures for round work pieces.

(10 marks)

[4 × 10 = 40 marks]