

Total No. of Questions—12]

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[3762]-213

S.E. (Production) (I Sem.) EXAMINATION, 2010

MACHINE TOOL OPERATION

(2008 COURSE)

Time : Three Hours

Maximum Marks : 100

N.B. :— (i) Attempt *one* question from each Unit in Section I and Section II.

(ii) Answers to the two Sections should be written on separate answer books.

(iii) Figures to the right indicate full marks.

(iv) Assume suitable data, if necessary.

SECTION I

Unit-I

1. (a) Explain tumbler gear mechanism with suitable sketches. [6]

(b) Explain taper turning attachment with suitable sketch. [6]

(c) Explain steady and follower rest with suitable sketches. [6]

Or

2. (a) Discuss mandrels with suitable sketches. [8]

(b) Explain working of tail stock with suitable sketches. [6]

P.T.O.

- (c) A shaft 1000 mm long has a taper 1 : 200 for length of 500 mm. The max. diameter of shaft is 80 mm. Determine minimum diameter of shaft and amount of set over. [4]

Unit-II

3. (a) Discuss types of drills with suitable sketches. [8]
(b) Explain sensitive and radial drilling machine with suitable sketches. [8]

Or

4. (a) Explain Floating holder assembly used in drilling machine with suitable sketch. [8]
(b) Discuss specification used in drilling and boring machine. [8]

Unit-III

5. (a) Discuss upmilling and down milling with suitable sketches. [8]
(b) Explain cam milling with suitable sketches. [8]

Or

6. (a) Discuss methods of indexing. [8]
(b) Calculate indexing for 75 division, hole circles available are : [8]

Plate I — 15, 16, 17, 18, 19, 20

Plate II — 21, 23, 27, 29, 31, 33

Plate III — 37, 39, 41, 43, 47, 49

SECTION II

Unit-IV

7. (a) Draw block diagram of shaper and slotter. [6]
(b) Draw neat sketch of broach geometry. [6]
(c) Advantages and limitations of broaching operation. [6]

Or

8. (a) Discuss types of broaching machine. [10]
(b) In shaper work length of stroke is 220 mm, number of double stroke is 30 and ratio of return time to cutting time is 2 : 3. Find cutting speed. [4]
(c) Write the specifications used in shaper and planer. [4]

Unit-V

9. (a) Discuss the classification of grinding machines with suitable sketches. [8]
(b) Discuss internal centerless grinding with suitable sketches. [8]

Or

10. Write short notes on the following : [16]
(i) Abrasives

- (ii) Grit Grade
- (iii) Wheel shape
- (iv) Structure.

Unit-VI

11. (a) Explain lapping with sketches. [8]

(b) Explain :

(i) Hot dipping

(ii) Polishing. [8]

12. Write short notes on the following : [16]

(i) Metal spraying

(ii) Buffing

(iii) Electro plating.

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