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Question Paper Code : 31545

B.E./B.Tech.. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Seventh Semester

Mechanical Engineering

ME 2027/ME 701/GE 1452/10122 MEE 21 – PROCESS PLANNING AND COST ESTIMATION

(Common to Production Engineering)

(Regulation 2008/2010)

(Common to PTME 2027 – Process Planning and Cost Estimation for B.E. (Part-Time) Sixth Semester – Mechanical Engineering – Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the objectives of method study?
2. What are the general rules to be followed in breaking down a task into elements?
3. Write the approaches to Process Planning.
4. List out the selection of machinery.
5. Give the Methods of costing.
6. How are Standard Data are developed?
7. What you mean by Depreciation?
8. Define Multiple Cost Method.
9. Define Inadequacy.
10. Define Flash Loss.

PART B — (5 × 16 = 80 marks)

11. (a) Write the basic procedure for method study. Explain briefly. (16)
- Or
- (b) (i) Give the various types of allowances used in process planning with examples. (8)
 - (ii) What are the benefits of simplification and standardization? (8)

12. (a) (i) Explain the basic factors affecting process design. (8)
(ii) Explain the steps involved in process planning (8)

Or

- (b) (i) What are the set of documents required for process planning. (10)
(ii) The fixed costs for a factory for the year 2009–10 are Rs. 1,50,000 and the variable cost is Rs. 10 per unit produced. The selling price per unit is Rs. 25. Calculate the break-even quantity. (6)
13. (a) What is meant by analytical estimating? Write its procedure, advantages limitations and applications. (16)

Or

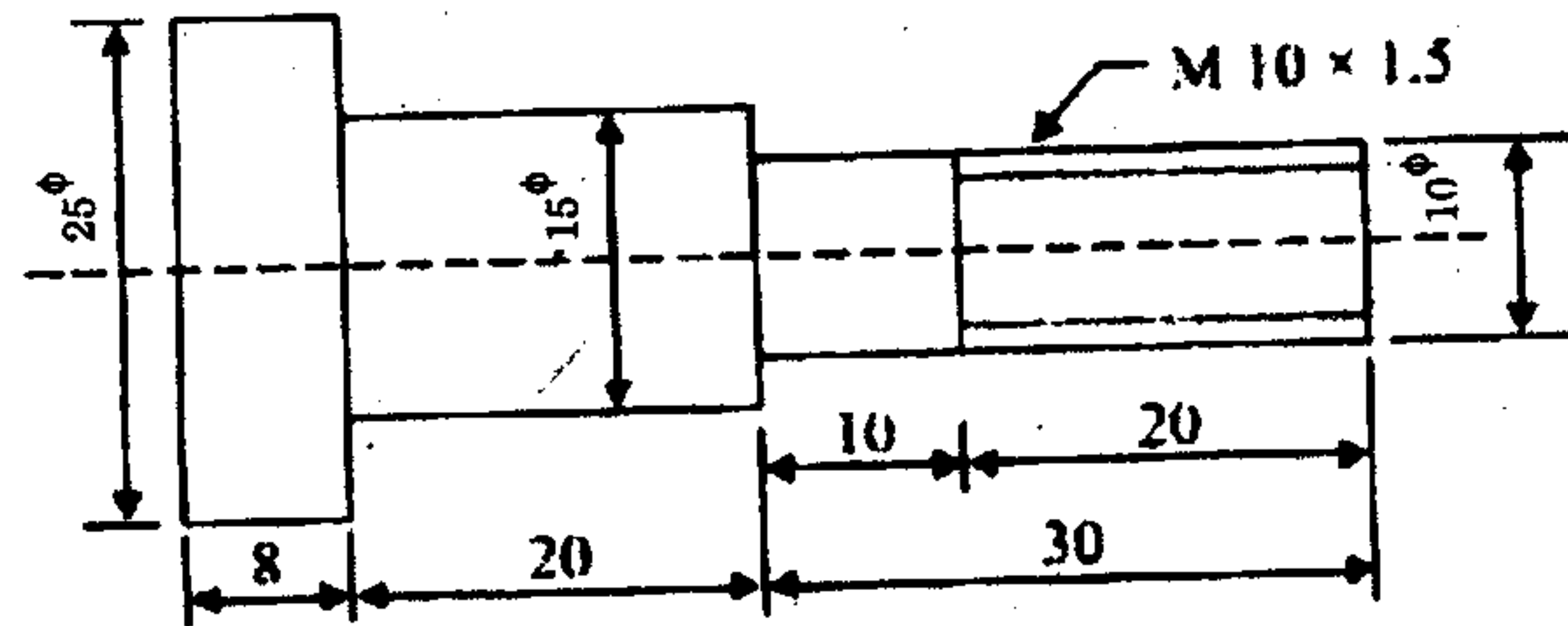
- (b) What are the components of a cost estimate or job estimate explain briefly. (16)
14. (a) From the following data for a sewing machine manufacturer, prepare a statement showing prime cost, Works/factory cost, production cost, total cost and profit.

Value of stock of material as on 1.04.2010	Rs. 26,000	
Material purchased	Rs. 2,74,000	
Wages to labour	Rs. 1,20,000	
Depreciation of plant and machinery	Rs. 8,000	
Depreciation of office equipment	Rs. 2,000	
Rent, taxes and insurance of factory	Rs. 16,000	
General administrative expenses	Rs. 3,400	
Water, power and telephone bills of factory	Rs. 9,600	
Water, lighting and telephone bills of office	Rs. 2,500	
Material transportation in factory	Rs. 2,000	
and Rent of office building	Rs. 2,000	
Direct expenses	Rs. 5,000	
Commission and pay of salesman	Rs. 10,500	
Repair and maintenance of plant	Rs. 1,000	
Works Manager salary	Rs. 30,000	
Salary of office staff	Rs. 60,000	
Value of stock of material as on 31.03.2011	Rs. 36,000	
Sale of products	Rs. 6,36,000.	(16)

Or

- (b) (i) Write the fixed cost and the variable cost of running a motor car for one year. (8)
(ii) Discuss the data requirements and sources of information for cost estimation. (8)

15. (a) Calculate the machining time required to produce one piece of the component shown in Fig. starting from 25 mm bar. The following data is available. (16)



For turning :

Cutting speed = 40 m/min

Feed – 0.4 mm/rev.

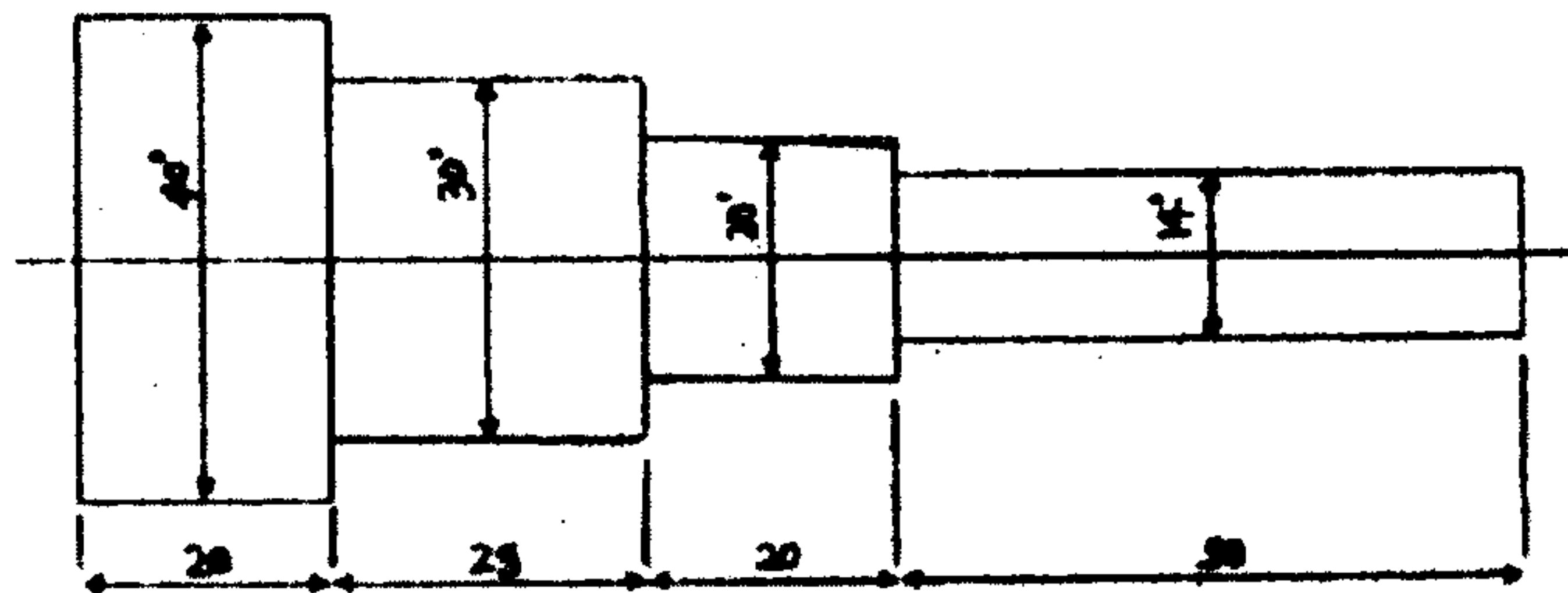
Depth of cut = 2.5 mm/per pass

For thread cutting :

Cutting speed = 8 m/min

Or

- (b) Calculate the net weight and gross weight for the component shown in Fig. Density of material used is 7.86 gm/cc. Also calculate :



ALL DIMENSIONS ARE IN m.m.

- (i) Length of 14 mm dia bar required to forge one component.
- (ii) Cost of forging/piece if :
 Material cost = Rs. 80 per kg
 Labour cost = Rs. 5 per piece
 Overheads = 150 percent of labour cost.