

GUJARAT TECHNOLOGICAL UNIVERSITY**B E Sem-VI Examination May 2011****Subject code: 162505****Subject Name: Estimating, Costing & Engineering Economics****Date: 24/05/2011****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define Estimating. Give importance of estimating and also list various functions of estimation department. **07**
- (b) Define costing. Describe various costing methods. How the cost of a product is controlled? **07**

- Q.2** (a) Explain in details the various elements which go to make up the total cost of any product. **07**
- (b) Explain in detail the different methods of ON COST allocation. **07**

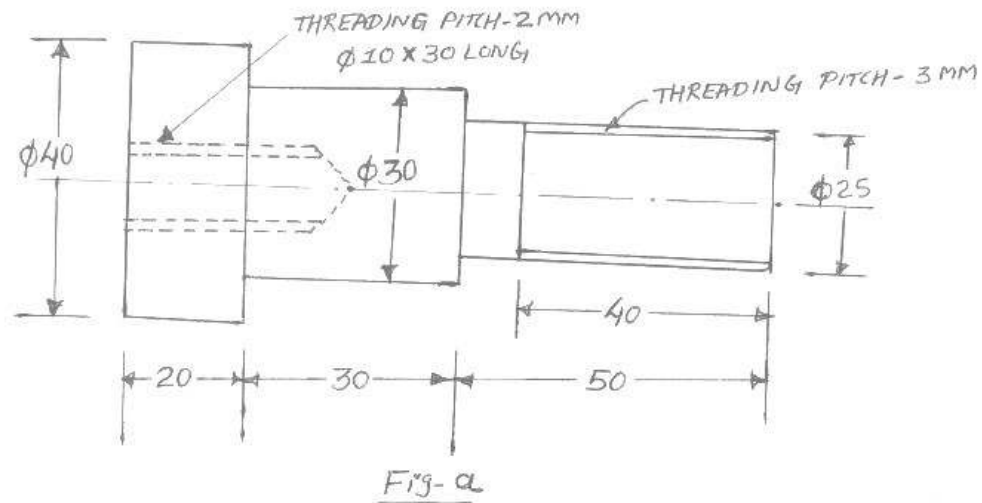
OR

- (b) What do you understand by prime cost & factory cost? A certain piece of work is produced by a firm in batches in 100. The direct material cost for that 100 pieces work is Rs 160.00 and the direct labour cost is Rs. 200.00. factory on-cost is 35% of the total material and labour cost. Overhead charges are 20% of the factory cost. Calculate prime cost and factory cost. If the management wants to make a profit of 10% on the gross cost, determine the selling price of each article. **07**
- Q.3** (a) A factory has 15 lathes of same makes and capacity and 5 shapers of same make and capacity. Lathes occupy 30m² area while shapers occupy 15 m² area. During one calendar year factory expenses are follows: **07**
- (i) Building rent and depreciation = Rs 5,000
 - (ii) Indirect labour and material = Rs 15,000
 - (iii) Insurance = Rs 2,000
 - (iv) Depreciation charges of lathes = Rs 5,000
 - (v) Depreciation charges of shapers = Rs 3,000
 - (vi) Power consumptions for lathes = Rs 2,000
 - (vii) Power consumptions for shapers = Rs 1,000
- Find out the machine hour rate for lathes and shapers, if all the lathes and shapers work for 25,000 hours and 8,000 hours respectively.
- (b) Why careful study of Mensuration is essential? Explain in details the various methods used for calculating area of irregular figures. **07**

OR

- Q.3** (a) Explain in details the estimation of volume of solids of revolution of a triangular area, rectangular area, semi circular area and trapezoidal area by using Guldinus rules. **07**

- (b) Find the machining time to complete the job as shown in figure (a) from the basic raw material of 50 mm diameter and 100 mm length. Assume: (all dimensions are in mm) 07
- (i) Cutting speed for turning = 30 m/min
 - (ii) Feed = 1 mm/rev
 - (iii) Depth of cut = 2.5 mm
 - (iv) Cutting speed for thread cutting = 9 m/min
 - (v) Cutting speed for drilling = 0.2 mm/rev



- Q.4 (a) What is Blanks layout in sheet metal shop? A steel pipe 10 m long and 0.6 m diameter is to be fabricated from M.S. plate of 1 cm thickness. Estimate cost if : 07
- (i) M.S. plates of size 2 m x 1 m are available at the rate of Rs 70.
 - (ii) Cost of rolling 10 % of material cost
 - (iii) Cost of riveting 20 % of material cost
 - (iv) Overhead charges 10 % of material cost.
- (b) Explain in details the Estimation procedure in forging shop. 07

OR

- Q.4 (a) Discuss the various factor affecting the welding cost. Two 1 m long M.S. plates of 10 mm thickness to be welded by a lap joint with the of a 6 mm electrode. Calculate the cost of welding. Assume the following data: 07
- (i) Current used = 250 amperes
 - (ii) Voltage = 30 V
 - (iii) Welding speed = 10 m/hr
 - (iv) Electrode used = 0.4 kg/m of welding
 - (v) Labour charges = Rs 1 / hr
 - (vi) Power charges = Rs 0.20 / kwh
 - (vii) Cost of electrode = Rs 5 /kg
 - (viii) Efficiency of machine = 60 %
- (b) Explain Estimation of pattern cost and Estimation in foundry shop. 07

- Q.5 (a) Explain cost accounting. Give its objectives and also write advantages of cost accounting. 07
- (b) Explain in details various factors of production. 07

OR

- Q.5 (a) Explain in details tools and techniques for cost reduction. 07
- (b) Explain the Trade cycle. Give characteristics and causes of trade cycle. 07
