Seat No.:	Enrolment
No	

Subject Name: Estimating Costing & Engineering Economics

Subject Code:162505

Time:2:30pm to 5:00pm

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI EXAMINATION – WINTER 2015

Date:11/12/ 2015

Total Marks: 70

nstru	nstructions:				
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.			
Q.1	(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: (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.	07		
	(b)	Why careful study of Mensuration is essential? Explain in details the various methods used for calculating area of irregular figures.	07		
Q.2	(a)	Explain in details the various elements which go to make up the total cost of any product.	07		
	(b)	• •	07		
		OR			
	(b)	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. \Box	07		
Q.3	(a)		07		
	(b)	and variable Overheads.	07		
Q.3	(a)	OR Define costing. Describe various costing methods. How the cost of a product is controlled?	07		
	(b)	A press making 60 strokes per minutes is used for making 30 blanks of $100 \text{ mm} \times 170 \text{ mm}$ size from each strip. Calculate the time required for blanking each strip if only 60 % of the strokes are	07		
		1/2			

time for blanking and piercing for 200 components. **Q.4** Explain cost accounting. Give its objectives and also write advantages of cost 07 accounting. **(b)** Explain in details various factors of production. 07 OR (a) Explain in details tools and techniques for cost reduction. **07 Q.4 (b)** Explain the Trade cycle. Give characteristics and causes of trade cycle. 07 Q.5 What is Blanks layout in sheet metal shop? A steel pipe 10 m long and 0.6 m 07 diameter is to be fabricated from M.S. plate of 1 cm thickness. Estimate cost if (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 Estimation of pattern cost and Estimation in foundry shop. 07 OR (a) Explain in details the Estimation procedure in forging shop. **Q.5 07 (b)** Discuss the various factor affecting the welding cost. Two 1 m long M.S. 07 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: (i) Current used = 250 amperes (ii) Voltage = 30 V

(iii) Welding speed = 10 m/hr

(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 %

(iv) Electrode used = 0.4 kg/m of welding

utilized. If holes are also pierced on this press, find out the total