

B.E/B.Tech(Full time) Degree End Semester Examinations, May 2012

INDUSTRIAL ENGINEERING

FOURTH SEMESTER

IE9251 – ENGG. ECONOMY COSTING & ACCOUNTING

(Regulations, 2008)

7

Time: 3hrs.

Max Marks: 100

Answer ALL Questions

PART - A

(10 X 2 = 20 marks)

Answer All Questions:

1. Identify the areas of decision making where managerial economics prescribes specific solutions to business problems.
2. What are the determinants of demand?
3. The demand for Baggie noodles rises from 6000kg to 7200kg when its price is reduced from Rs.45/kg to Rs. 40/kg, Find out the price elasticity of demand for Baggie noodles.
4. The demand of a product for the last 3 months is Jan-460, Feb – 511 and March – 520. Using the average of these values as a starting forecast for April, exponential smoothing is to be initiated for future forecasting. If the actual demand for April is 527, what is the forecast value for May? (Use  $\alpha=0.1$ )
5. What are the objectives of pricing?
6. Distinguish between costing and Estimation.
7. What do you mean by feed and depth of cut?
8. Calculate P/V ratio and break even point from the following:  
Sales 1000 units at Rs.10 per unit; Variable cost= Rs. 6 per unit and fixed cost = Rs.8000.
9. What is IRR? State the criteria you use to Accept/Reject the project under IRR method.
10. Suppose that your estimates of the possible one- year returns from investing in the common stock of the A.A. Eye-Eye corporation were as follows:

Prob. Of occurrence	0.1	0.2	0.4	0.2	0.1
Possible return	-10%	5%	20%	35%	50%

What is the expected value of return and standard deviation?

PART – B

(5 X 16= 80marks)

11. Read the case given below and answer the questions given at the end.

Theory and Real World Market

The theory of perfect competition describes how firms act in a market structure where (1) there are many buyers and sellers, none of which is large in relation to total sales or purchases; (2) sellers sell a homogeneous product; (3) buyers and sellers have all relevant informations; (4) There is easy entry and exit. These assumptions may however be approximated in some real world markets. In such markets, the number of sellers may not be large enough for every firm to be a price taker, but the firm's control over price may be

negligible. The amount of control may be so negligible. In fact, that the firm acts as if it were a perfectly competitive firm.

Similarly, buyers may not have all relevant information concerning price and quality, but they may still have a great deal of information and the information they do not have may not matter. The products that the firms in the industry sell may not be homogeneous, but the differences may be consequential.

In short, a market that does not meet the assumptions of perfect competition may nonetheless approximate those assumptions to such a degree that it behaves as if it were a perfectly competitive market. If so, the theory of perfect competition can be used to predict the market's behavior.

Questions:

- i. A price taker does not have the ability to control the price of the product it sells. What does this mean? (4)
  - ii. Why is perfectly competitive firm a price taker? (4)
  - iii. The horizontal demand curve for the perfectly competitive firm signifies that it cannot sell any of its products for a price higher than the market equilibrium price. Why can't it? (4)
  - iv. Suppose the firm in a real world market do not sell a homogeneous product. Does it necessarily follow that the market is not perfectly competitive? (4)
- 12) a) (i) Suppose you are a sales manager of an organization. Explain how does the analysis of demand contribute to business decision making, in the light of the responsibilities of a sales manager. (8)
- (ii) Critically examine ' Profit maximization' as the objective of a business firm. (8)
- (or)
- b) (i) Explain the relationship between MC, AC and TC assuming a short-run non-linear cost function. Explain the concept graphically also. (8)
- (ii) How is the least cost combination arrived at with the help of ISO-Cost and ISO-Quant curves? (8)
- 13) a) (i) The catalogue price of a product is Rs.1050/-, the discount allowed to the distributor being 20% . Data collected at a certain period show that the administrative, selling and distribution expenses is equal to the factory cost and that the ratio between material cost, labour cost and overhead expenses in the factory are 1:3:2. If the labour cost is Rs.200, what profit is being made on the product? (8)
- (ii) A square bar of 3cm side and 25cm length is to be converted by hand forging into a bar of hexagonal section having each side equal to 1.5cm. Calculate the length of hexagonal bar produced. Assume 7% scale loss. (8)
- (or)
- b) (i) On a planning machine, the time taken on a cutting stroke on a job 3 metre long is 12seconds and the time taken on the return stroke is 4seconds. Calculate the time it will take to plan a surface 3cm long and 1.5cm wide, if the feed is 6.25mm per cutting stroke. (8)
- (ii) Find the time required for turning an MS spindle of 20mm dia and 300mm long from a 25mm dia bar. Also find the time required to cut the thread on the spindle upto a length of 75mm on one end of the spindle. Assume pitch of the thread as 1.5mm. (8)

- 14) a) Mr. Sanjay owns a fleet of taxis and the following information is available from the Records maintained by him.

Number of Taxis :	10
Cost of each Taxi :	Rs. 3,54,600
Salary of Accountant per month :	Rs.7000
Salary of Manager per month :	Rs.10000
Salary of Cleaner per month :	Rs.2000
Salary of Mechanic per month :	Rs.4000
Garage rent per month :	Rs.3000
Annual tax per taxi :	Rs.9000
Driver's salary per taxi :	Rs.7000
Annual repair per taxi :	8000
Insurance premium per annum(%) :	5

Total life of a taxi is about 2,00,000kms. A taxi runs 300 kms in a month and 30% of this distance is run without any passengers. Petrol consumption is one litre for every 10km at Rs.75per litre. Oil and sundry expenses are Rs.100 per 100kms. Calculate the cost of running a taxi per km. (16)

(or)

- 14) b) (i) The standard estimate for materials to manufacture 1000units of a commodity is 400kgs; at Rs.2.50 per kg. When 2000 units of the commodity are manufactured, it is found that 820 kgs of materials are consumed at Rs. 2.60 per kg. Calculate (1) Material cost variance (2) Material price variance and (3) Material usage variance. (4)
- (ii) From the following data provided by Vinak Ltd for the month of August 2011, Calculate (1) Total over Head cost variance, (2) Fixed Over Head cost variance and (3) Variable Over Head cost variance. (6)

	Budget	Actual
Output in units	30,000	32,500
Fixed overheads (Rs)	45,000	50,000
Variable overheads(Rs)	60,000	68,000

- (iii) A company is producing product X in a process. In a period 500 units were introduced at Rs. 4 per unit and the normal loss is fixed at 10% of the number of units introduced. The other costs are materials Rs.2600, wages Rs.2250 and production overheads Rs.2250. The output during the period is 450 units and there was no opening and closing balance in the process. The normally lost units were sold at Rs. 2 per unit. Prepare the process A/C. (6)

- 15) a) From the following data, prepare a profit and loss account for the year ended 31.03.2012 and a balance sheet as on that date.

Trial balance as on 31.03.2012.

Particulars	Debit balance amount (Rs)	Credit balance amount (Rs)
Capital	-	35000
Sales	-	25000
Purchases	15000	
Salaries	2000	
Rent	1500	
Insurance premium	300	
Machinery	2800	
Cash on Bank	4500	
Cash on hand	2000	
Stock(01.04.2011)	5200	
Debtors	2500	
Creditors	-	1000
Total	61000	61000

Adjustments to be carried out:

1. Stock on 31.03.2012 Rs.4900/-
2. Salaries unpaid Rs.300/-
3. Rent paid in Advance Rs.200/-
4. Insurance premium prepaid Rs.90/-

(16)

(or)

- 15) b) (i) A project costs Rs.15,60,000 and yields annually a profit of Rs. 2,70,400 after depreciation of 12% p.a but before tax at 25%. Calculate pay back period. (4)
- (ii) A company is considering investment of Rs. 10,00,000 in a project. The following are the income forecasts, after depreciation and Tax:  
1<sup>st</sup> year loss Rs. 1,00,000; 2<sup>nd</sup> year profit Rs. 3,00,000; 3<sup>rd</sup> year profit Rs. 4,00,000; 4<sup>th</sup> year profit Rs. 2,00,000; 5<sup>th</sup> year profit Rs. 2,00,000. Calculate the Accounting rate of return. (4)
- (iii) Two projects M and N which are mutually exclusive are being under consideration. Both of them require an investment of Rs. 1,00,000 each. The net cash inflows are estimated as under:

year	1	2	3	4	5
M	10,000	40,000	30,000	60,000	90,000
N	30,000	50,000	80,000	40,000	60,000

The company's targeted rate of return on investment is 12% . You are required to assess the projects on the basics of their present values, using (1) NPV method and (2) Probability index method. Present values of Re.1/- at 12% interest for five years are given below:

1<sup>st</sup> year: 0.893; 2<sup>nd</sup> year: 0.797; 3<sup>rd</sup> year: 0.712; 4<sup>th</sup> year: 0.636; 5<sup>th</sup> year: 0.567. (8)