



September 5, 2008

COST ACCOUNTING
Module D

(MARKS 100)
(3 hours)

- Q.1 Binary Ltd. (BL) manufactures three products, A, B and C. It is the policy of the company to apportion the joint costs on the basis of estimated sales value at split off point. BL incurred the following joint costs during the month of August 2008:

	Rs. in '000
Direct material	16,000
Direct labour	3,200
Overheads (including depreciation)	2,200
Total joint costs	21,400

During the month of August 2008 the production and sales of Product A, B and C were 12,000, 16,000 and 20,000 units respectively. Their average selling prices were Rs. 1,200, Rs. 1,400 and Rs.1,850 per unit respectively.

In August 2008, processing costs incurred on Product A after the split off point amounted to Rs. 1,900,000.

Product B and C are sold after being packed on a specialized machine. The packing material costs Rs. 40 per square foot and each unit requires the following:

Product	Square feet
B	4.00
C	7.50

The monthly operating costs associated with the packing machine are as follows:

	Rupees
Depreciation	480,000
Labour	720,000
Other costs	660,000

All the above costs are fixed and are apportioned on the basis of packing material consumption in square feet.

Required:

- (a) Calculate the joint costs to be apportioned to each product. (13)
- (b) BL has received an offer from another company to purchase the total output of Product B without packaging, at Rs. 1,200 per unit. Determine the viability of this offer. (03)

- Q.2 Alpha Motors (Pvt.) Ltd. uses a special gasket for its automobiles which is purchased from a local manufacturer. The following information has been made available by the procurement department:

Annual requirement (no. of gaskets)	162,000
Cost per gasket (Rs.)	1,000
Ordering cost per order (Rs.)	27,000
Carrying cost per gasket (Rs.)	300

(2)

The gaskets are used evenly throughout the year. The lead time for an order is normally 11 days but it can take as much as 15 days. The delivery time and the probability of their occurrence are given below:

Delivery time (in days)	Probability of Occurrence
11	68%
12	12%
13	10%
14	6%
15	4%

Required:

- (a) Compute the Economic Order Quantity (EOQ) and the total Ordering Costs based on EOQ. (04)
- (b) What would be the safety stock and re-order point if the company is willing to take:
- a 20% risk of being out of stock?
 - a 10% risk of being out of stock?
- (08)

Note: Assume a 360 day year.

- Q.3 (a) Hexa Limited uses a standard costing system. The following profit statement summarizes the performance of the company for August 2008:

		Rupees
Budgeted profit		3,500
Favorable variance:		
Material price	16,000	
Labour efficiency	11,040	27,040
Adverse variance:		
Fixed overheads	(16,000)	
Material usage	(6,000)	
Labour rate	(7,520)	(29,520)
Actual profit		1,020

The following information is also available:

Standard material price per unit (Rs.)	4.0
Actual material price per unit (Rs.)	3.9
Standard wage rate per hour (Rs.)	6.0
Standard wage hours per unit	10
Actual wages (Rs.)	308,480
Actual fixed overheads (Rs.)	316,000
Fixed overheads absorption rate	100% of direct wages

Required:

Calculate the following from the given data:

- (a) Budgeted output in units
- (b) Actual number of units purchased
- (c) Actual units produced
- (d) Actual hours worked
- (e) Actual wage rate per hour (15)
- (b) State any two possible causes of favourable material price variance, unfavourable material quantity variance, favourable labour efficiency variance and unfavourable labour rate variance. (04)

- Q.4 Decimal World Limited manufactures and sells modems. It manufactures its own circuit boards (CB), an important part of the modem. The present cost to manufacture a CB is as follows:

	Rupees
Direct material	440
Direct labour	210
Variable overheads	55
Fixed overheads	
Depreciation	60
General overheads	30
Total cost per unit	795

The company manufactures 400,000 units annually. The equipment being used for manufacturing CB has worn out completely and requires replacement. The company is presently considering the following options:

- (A) Purchase new equipment which would cost Rs. 240 million and have a useful life of six years with no salvage value. The company uses straight-line method of depreciation. The new equipment has the capacity to produce 600,000 units per year. It is expected that the use of new equipment would reduce the direct labour and variable overhead cost by 20%.
- (B) Purchase from an external supplier at Rs.730 per unit under a two year contract.

The total general overheads would remain the same in either case. The company has no other use for the space being used to manufacture the CBs.

Required:

- (a) Which course of action would you recommend to the company assuming that 400,000 units are needed each year? (Show all relevant calculations) (07)
- (b) What would be your recommendation if the company's annual requirements were 600,000 units? (06)
- (c) What other factors would the company consider, before making a decision? (03)

- Q.5 Octa Electronics produces and markets a single product. Presently, the product is manufactured in a plant that relies heavily on direct labour force. Last year, the company sold 5,000 units with the following results:

	Rupees
Sales	22,500,000
Less: Variable expenses	13,500,000
Contribution margin	9,000,000
Less: Fixed expenses	6,300,000
Net income	2,700,000

Required:

- (a) Compute the break-even point in rupees and the margin of safety. (04)
- (b) What would be the contribution margin ratio and the break-even point in number of units if variable cost increases by Rs. 600 per unit? Also compute the selling price per unit if the company wishes to maintain the contribution margin ratio achieved during the previous year. (05)
- (c) The company is also considering the acquisition of a new automated plant. This would result in the reduction of variable costs by 50% of the amount computed in (b) above whereas the fixed expenses will increase by 100%. If the new plant is acquired, how many units will have to be sold next year to earn net income of Rs. 3,150,000. (03)

- Q.6 Ternary Engineering Limited produces front and rear fenders for a motorcycle manufacturer. It has three production departments and two service departments. Overheads are allocated on the basis of direct labour hours. The management is considering to change the basis of overhead allocation from a single overhead absorption rate to departmental overhead rate. The estimated annual overheads for the five departments are as under:

	Production Departments			Service Departments	
	Fabrication	Phosphate	Painting	Inspection	Maintenance
	-----Rs. in 000-----				
Direct materials	6,750	300	750		
Direct labour	1,200	385	480		
Indirect material				30	75
Other variable overheads	200	70	100	30	15
Fixed overheads	480	65	115	150	210
Total departmental expenses	8,630	820	1,445	210	300
Maximum production capacity	20,000	25,000	30,000		
Direct labour hours	24,000	9,600	12,000		
Machine hours	9,000	1,000	1,200		
Use of service departments:					
Maintenance - Labour hours	630	273	147		
Inspection - Inspection hours	1,000	500	1,500		

Required:

- (a) Compute the single overhead absorption rate for the next year. (06)
- (b) Compute the departmental overhead absorption rates in accordance with the following:
- The Maintenance Department costs are allocated to the production department on the basis of labour hours.
 - The Inspection Department costs are allocated on the basis of inspection hours.
 - The Fabrication Department overhead absorption rate is based on machine hours whereas the overhead rates for Phosphate and Painting Departments is based on direct labour hours. (10)

- Q.7 Unity Electronics Limited manufactures and supplies condenser fans used in the production of Refrigerators to Sigma Corporation. The company earns a contribution margin of Rs. 600 on each unit sold before charging the labour cost. Following information is available from the company's records.

Number of employees	180
Standard working hours (9 hours/day)	54
Standard hours per unit (at 100% efficiency)	3
Standard labour rate per hour (Rupees)	30

Due to the rise in demand for Refrigerators, Sigma Corporation has increased the size of its order. However, the management is concerned about the productivity of its labour force. An analysis of the employees performance report has revealed that the company is suffering on account of the following:

- A tendency to waste time as a result of which approximately 9 working hours are lost per week per employee.
- A tendency to work inefficiently, as a result of which the production efficiency is only 74%.

In order to meet the increased demand, the management is considering an increase in wages by Rs. 5 per hour. The increase is likely to motivate the employees and reduce the wastage of time by 5 hours and will also improve the production efficiency to 88%.

Required:

Advise whether Unity Electronic Limited should revise the wages. Show all necessary supporting calculations. (09)

(THE END)