



Cost and Management Accounting

Q.1 Sarwar Limited (SL) manufactures two industrial products i.e. K2 and K9. It also manufactures other products in accordance with the specification of customers. SL's products require specialised skilled labour. Maximum labour hours available with the company are 300,000 per month.

Following information has been extracted from SL's budget:

	K2	K9
	---- Rs. per unit ----	
Selling price	16,500	26,000
Direct material	6,000	8,000
Direct labour (Rs. 300 per hour)	4,500	7,500
Variable production overheads (based on labour hours)	1,875	3,125
Applied fixed production overheads (based on labour hours)	1,500	2,500
Monthly demand (Units)	5,000	8,000

An overseas customer has offered to purchase 3,000 units of a customized industrial product 'A-1' at a price of Rs. 35,000 each. The duration of contract would be one month. The cost department has ascertained the following facts in respect of the contract:

- (i) Each unit of A-1 would require 3 units of raw material B-1 and 2 units of raw material C-3. B-1 is available in the local market at Rs. 2,500 per unit. However, the required quantity of C-3 is not available in the local market and would be imported from Srilanka at a landed cost of Rs. 2.4 million.
- (ii) Each unit of A-1 would require 35 labour hours.
- (iii) A specialised machinery would be hired for five days. However, due to certain production scheduling issues, it is difficult for SL to exactly predict when the machine would be required. As a result of negotiations, SL has received the following offers:
 - Falah Modarba has quoted a rent of Rs. 0.9 million for the entire month. If accepted, SL would be able to sublet the machine at Rs. 20,000 per day.
 - Tech Rentals has quoted a rent of Rs. 57,000 per day and guaranteed availability of machinery when required.

The management believes that it can increase/decrease the production of K2 and K9, if required.

Required:

Determine the maximum profit that can be earned by SL, in the above situation.

(10)

- Q.2 (a) Briefly describe any **three** differences between investment and speculation. (03)
- (b) Valika Limited (VL) plans to introduce a new product AX which would be used in hybrid cars. Following information is available in this regard:
- (i) Initial investment in the new plant including installation and commissioning is estimated at Rs. 50 million. The plant is expected to have a useful life of four years and would have annual capacity of 200,000 units.
 - (ii) The demand of AX for the first year is expected to be 180,000 units which would increase by 10% per annum in year 2 and 3. However, in year 4 the demand is expected to decline by 10%.
 - (iii) The contribution margin for the first year is estimated at Rs. 100 per unit which is expected to increase by 5% each year.
 - (iv) The new plant would be installed at VL's premises which are presently rented out at Rs. 1.8 million per annum. As per the terms of rent agreement, the rent is received in advance and is subject to 7% increase per annum.
 - (v) Working capital of Rs. 10 million would be required at the commencement of the project. Working capital is expected to increase by 10% each year.
 - (vi) The new plant would be depreciated at the rate of 25% under the reducing balance method. Tax depreciation is to be calculated on the same basis. The residual value of the plant at the end of useful life is expected to be equal to its carrying value.
 - (vii) VL's cost of capital is 10%.
 - (viii) Tax rate is 30% and is paid in the year in which the tax liability arises.

Required:

On the basis of net present value, advise whether VL should invest in the above project. *(Assume that except stated otherwise, all cash flows would arise at the end of year)* (17)

- Q.3 Washington Limited (WL) is a listed company having paid-up capital of Rs. 140 million. WL deals in the manufacturing of washing machines. Following are the extracts from the budgeted statement of profit or loss for the year ending 31 December 2018:

	Rs. in '000
Sales revenue (Rs. 10,000 per unit)	168,000
Cost of goods sold (including fixed cost of Rs. 21.2 million)	(127,000)
Gross profit	41,000
Operating expenses (including fixed cost of Rs. 4.5 million)	(16,000)
Profit before taxation	25,000
Taxation @ 30%	(7,500)
Profit after taxation	17,500

Additional information:

- (i) An analysis of actual results for the first two months of the year 2018 shows that:
 - Due to change in import duty structure, imported products have become available in the market at much cheaper prices. Consequently, it was decided to reduce the selling price to Rs. 9,500 per unit with effect from 1 January 2018.
 - 1,500 washing machines were sold during the period.
 - Due to increase in raw material prices with effect from 1 January 2018, variable cost of sales has increased by 5%.
- (ii) To boost the sales, WL has decided to launch a promotion campaign at an estimated cost of Rs. 5 million.
- (iii) The directors of WL wish to pay 5% dividend to its ordinary shareholders. However, according to the agreement with the bank, WL cannot pay dividend exceeding 80% of its profit after taxation.

Required:

Calculate the minimum number of units to be sold in remaining 10 months to enable WL to pay the desired dividend. (10)

Q.4 RI Limited (RIL) is engaged in the manufacturing of spare parts for industrial machines. RIL receives bulk orders from its customers and follows job order costing. Following data pertains to two of the jobs which were started in the month of February 2018:

	Job F01	Job F02
Size of job order (Units)	5,400	3,600
Labour hours used	27,500	21,600
Labour rate per hour	Rs. 360	Rs. 400

- (ii) Each unit of both jobs require 24 kg of raw material S40. Purchase price of S40 was Rs. 30 per kg.
- (iii) The inventory of S40 at beginning and end of the month was Rs. 2,940,000 and Rs. 1,740,000 respectively.
- (iv) Wages were paid on 28 February 2018. Income tax withheld from the wages amounted to Rs. 500,000 which would be deposited in government treasury in the following month.
- (v) Job F01 was in process at month-end. However, Job F02 was completed during the month of February and finished goods were sent to warehouse. During the delivery to the customer, 500 units were damaged badly and their realisable value is 50% of the cost.

Total labour hours utilized during the month were 100,000. Factory overheads are applied at Rs. 120 per direct labour hour. Under/over applied factory overheads are charged to cost of sales at month-end. Total actual factory overheads amounted to Rs. 11,000,000, out of which 40% were fixed.

Required:

Prepare journal entries to record the transactions for the month of February 2018. (13)

Q.5 MZ Limited (MZL) manufactures a single product X and uses standard marginal costing system. The standard cost card of product X is as follows:

	Rupees
Raw material (13 kg @ Rs. 135 per kg)	1,755
Labour (14 hours @ Rs. 100 per hour)	1,400
Variable production overheads (Rs. 75 per labour hour)	1,050

Following data is available in respect of operations for the month of February 2018:

- (i) 55,000 units were put into process. 1,500 units were lost in process which were considered to be normal loss. Process losses occur at the end of the process.
- (ii) 698,000 kg of material was purchased at Rs. 145 per kg. Material is added at the start of the process and conversion costs are incurred evenly throughout the process.
- (iii) 755,000 labour hours were worked during the month. However, due to certain labour related issues, wages were paid at Rs. 115 per hour.
- (iv) Fixed production overheads are budgeted at Rs. 40 million for the month of February 2018. Total actual production overheads amounted to Rs. 95 million. Actual fixed production overheads exceeded budgeted fixed overheads by Rs. 1.1 million.
- (v) Inventory balances were as under:

	01 February 2018	28 February 2018
Raw material (kg)	15,000	17,000
Work in process (units)	5,000 (60% converted)	6,000 (80% converted)
Finished goods (units)	10,000	12,000

- (vi) MZL uses FIFO method for valuing the inventories.

Required:

Compute material, labour and overhead variances. (14)

Q.6 Khan Limited (KL) imports and sells a product 'AA'. KL is faced with a situation where lead time is mostly predictable i.e. 1 month but lead time usage varies quite significantly. Data collected for past three years shows that probability for lead time usage is as follows:

No. of units demanded during lead time	Probability of demand during lead time (%)
1,000	30
660	50
450	20

Other relevant information is as follows:

- (i) Annual demand is 8,640 units.
- (ii) Contribution margin is Rs. 40 per unit.
- (iii) Purchase orders are raised on the basis of economic order quantity model. Annual holding cost is Rs. 100 per unit whereas average cost of placing an order is Rs. 6,750.

Required:

Determine at which of the following re-order levels, KL's profit would be maximised:

- 1,000 units
- 450 units
- Expected demand during lead time

(17)

Q.7 Sadiq Limited (SL) is in the process of preparation of budget for the year ending 31 December 2018. Following are the extracts from the statement of profit or loss for the year ended 31 December 2017:

	Rs. in million
Sales (30% cash sales)	7,500
Cost of goods sold	(4,000)
Gross profit	3,500
Operating expenses	(1,250)
Net profit before tax	2,250

Raw material inventory as on 1 January 2017 amounted to Rs. 152 million. There were no opening and closing inventories of work in process and finished goods. SL follows FIFO method for valuation of inventories.

Following are the projections to be used in the preparation of the budget:

- (i) Selling price would be reduced by 5%. Further, credit period offered to customers would be reduced from 45 days to 30 days. As a result, volumes of cash and credit sales are expected to increase by 10% and 5% respectively.
- (ii) Ratio of manufacturing cost was 5:3:2 for raw material, direct labour and factory overheads respectively.
- (iii) All operating expenses and 20% of factory overheads are fixed. Total depreciation for the year 2017 amounted to Rs. 100 million and was apportioned between manufacturing cost and operating expenses in the ratio of 7:3. Depreciation for the next year would remain the same.
- (iv) Raw material inventory would be maintained at 30 days of consumption. Up to 31 December 2017, it was maintained at 45 days of consumption.
- (v) Raw material prices and direct labour rate would increase by 10% and 6% respectively.
- (vi) Impact of inflation on all other costs would be 5%.
- (vii) The existing policy of payment to raw material suppliers in 30 days is to be changed to 15 days. Other costs are to be paid in the month of incurrence.

Required:

Compute the budgeted net cash inflows/(outflows) for the year ending 31 December 2018. (Assume there are 360 days in a year)

(16)

(THE END)