

STAGE IV

Paper 17: Management Accounting — Decision

Max. marks 100

Time allowed – 3 hrs.

Q.1 SK Ltd. has set up a treatment plant at K town. The Co. purchases the basic raw material viz. raw KAB and arranges for the sale of the finished KAB after treatment in its plant.

The treatment plant has a capacity of 60000 mtpa of raw KAB. The variable cost of treatment of raw KAB is Rs.4/- pmt & fixed cost amount to Rs.6,00,000 p.a. There is no loss in process.

The Co. owns a fleet of vehicles having a capacity to handle 260 lakh tonne-km. of raw KAB. The fixed costs of transport network of the Co. are Rs.10,40,000 p.a. & the variable cost amount to 8 paise per t-km. The Co. also provides another transport service for delivery of finished KAB. The cost of this service is estimated at 16 paise per t-km. variable and Rs.45,000 p.a. fixed. Facilities for hiring transport of incoming & outgoing goods are also available outside at a cost of 18 paise per t-km.

The Co. has 3 sources of purchase of raw KAB as per details given below:-

a) The data relating to outputs, costs & distances of the 3 sources are:-

	Sources		
	B town	C town	D town
Capacity of raw KAB (tones p.a.)	9000	27000	45000
Distance of the towns from K town in km.	250	250	500
Cost of extraction of raw KAB			
VC – Rs./tonne	90	120	68
FC – Rs./annum	24000	80000	96000

- b) The source at B town being the subsidiary of Co. has an offer from outside party for purchase of its entire output of raw KAB at Rs.108 per tonne from source.
- c) C town has its own arrangement for the sale of its output of raw KAB but is prepared to offer the left over quantity of 8000 tonnes p.a. to the Co. at a cost of Rs.120 per tonne.
- d) The D town source can supply its entire quantity of raw KAB to the Co.

The Co. can sell its product finished KAB to the following customers:-

Customer	Qty – mt/annum	Price/t	Delivery terms	Distance from plant
NA	6000	200	At Customer's site	8
NB	6000	188	Ex-factory	-
NC	15000	168	Ex-factory	-
ND	9000	150	Ex-factory	-
NE	10000	192	At Customer's site	22
NF	9000	220	At Customer's site	15
NG	9000	200	At Customer's site	26

You are required to:

1. Evaluate the alternative proposals for the purchase of raw KAB, Sales of the treated product KAB & transportation plans for incoming & outgoing goods with a view to maximizing the profitability.
2. Prepare a statement showing the profitability of the proposal recommended by you. (40 marks)

Q. 2 The following information is available from the records of a Co. which converts into finished products, three types of partly finished components supplied by customers.

Each of the components has to pass through 3 deptts. Viz. Deptt. A, comprising 30 machines of one type, Deptt. B, comprising 10 machines of another type & Deptt. C comprising 20 machines of third type. The finished components are given to the customer from whom a processing charge to cover (i) Variable Cost, (ii) Fixed Cost & (iii) Profit realized.

Only 3 types of components X,Y & Z can be processed at this factory & each of these must pass through all the 3 operating deptts. A, B & C.

The machine hrs. per piece are as follows

Deptt.	X	Y	Z
A	2.8	4.0	12.0
B	1.0	2.0	4.0
C	1.4	3.5	8.0

The normal available working hrs. for the factory is 7000 p.a. in three shifts. V.C. per machine hr. in Deptt. A, B & C are Rs.5/-, Rs.10/- & Rs.4/- respectively. FOH costs have been worked out at Rs.4.00 per machine hr. applied uniformly to all available m/c hrs. in all the deptts. Profits to be covered in the processing charge for each component is based on an expected 22% return, net of Income Tax on Rs.21 lacs capital employed, the I.T. rate being 35%. For fixing the processing charges for each component, contribution based on a single rate per hr. for all machines in all deptts. to cover fixed costs & profits.

A Cost Accountant has advised the company that the contribution rate should be based on machine hrs. of one deptt. only.

You are required to:-

- State which process should be selected for this purpose & why.
- Calculate the processing charges for the 3 products both under the existing method & also under the one proposed by Cost Accountant. (15 marks)

Q.3 In respect of following competing capital projects A & B, you are required to use discounted flow techniques to:-

- Prepare on a single graph comparative present value profiles from 0% to 16% for each project
- Read the I.R.R. for each project from the graph.
- State for what range of capital costs Project A is to be preferred to B & reasons therefore.

The information given is:

Particulars	Machine A	Machine B
Initial Cost	10,00,000	10,00,000
Net Saving		
Year 1	50,000	6,00,000
Year 2	2,00,000	4,00,000
Year 3	10,00,000	2,00,000
Year 4	1,00,000	50,000

Below is shown the value today of Re.1/- to be received or paid after given number of years at various rates of interest.

	Present Value of Re.1/-			
	4%	8%	12%	16%
After I Year	.962	.926	.893	.862
After II Year	.925	.857	.797	.743
After III Year	.889	.794	.712	.641
After IV Year	.855	.735	.636	.552

(15 marks)

Q. 4 A and B are members of a cartel producing the same product. By a mutual arrangement, they cater to the entire needs of the market

	A	B
Installed Capacity (units)	20000	15000
Normal working efficiency	80%	75%
Market demand - 25000 units		
The demand is satisfied by A & B in the ratio of 3:2		
Details of the fixed costs:		
Upto 50% of the installed capacity	Rs.1,40,000	Rs.1,60,000
Between 51-75% of installed capacity	Rs.1,50,000	Rs.1,75,000
Beyond 75% of the installed capacity	Rs.1,80,000	Rs.2,00,00
Variable costs per unit	Rs.50	Rs.45
Selling Price - Rs.80 per unit		

In 2004, it is anticipated that a recession will set in and consequently the total market demand for the product will only be 50% of the present position. Market price will suffer a reduction by 20%. The members agree that either of them will cater to the needs of the market fully, paying the other 40% of the profits from sales.

You are informed that the additional costs of improving machine efficiency beyond the present limits will be Rs.15000 and Rs.25000 for A and B respectively.

Ascertain which of the members will find it profitable to work ? Working must form part of your answer. (15marks)

Q. 5 The management of a firm is considering an investment project costing Rs.1,50,00,000 and it will have a scrap value of Rs.10,00,000 at the end of its 5-year life. Transportation charges are expected to be Rs.5,00,000 and installation charges are expected to be Rs.25,00,000. If the project is accepted, a spare parts inventory of Rs.10,00,000 must also be acquired and maintained. It is estimated the spare parts will have an estimated scrap value after 5 yrs. to 60% of their initial costs.

Annual revenue from the project is expected to be Rs.1,70,00,000 and annual labour, material and maintenance expenses are estimated to be Rs.15,00,000, Rs.50,00,000 and Rs.5,00,000 respectively. The depreciation and taxes for each of the five years will be:-

Year	Depreciation (Rs.)	Taxes (Rs.)
1	72,00,000	11,20,000
2	43,20,000	22,72,000
3	32,40,000	27,04,000

4	21,60,000	31,36,000
5	80,000	39,68,000

Calculate net cash flows for each year and cost of the project. Evaluate the project at 12% rate of interest .**(15 marks)**