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VIRTUAL COACHING CLASSES ORGANISED BY BOS, ICAI

INTERMEDIATE LEVEL PAPER 3: COST & MANAGEMENT ACCOUNTING TOPIC COVERED: SERVICE SECTOR COSTING

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SERVICE SECTOR COSTING

This method of costing is applied by those undertakings which provide services rather than production of commodities. This method of costing is used by transport companies, gas and water works departments, electricity supply companies, canteens, hospitals, theatres, schools etc.

Industry	Single Unit	Composite Unit
<i>Transportation</i>	<i>Cost per Ton, Cost per Passenger, Cost Per Mile , Cost per Kilometer etc...</i>	<i>Cost per Ton Km , Cost per Passenger Km , Cost per Tone Mile etc....</i>
<i>Hotel</i>	<i>Cost per Room, Cost per Guest, Cost per Day etc....</i>	<i>Cost per Room Day , Cost per guest Day etc....</i>
<i>Hospital</i>	<i>Cost per Patient , Cost per Bed</i>	<i>Cost per Patient Bed</i>
<i>Insurance</i>	<i>Cost per policy, Cost per claim, Cost per TPA etc...</i>	-
<i>Educational Institutes</i>	<i>Cost per Course, Cost per Student, Cost per Batch etc...</i>	-



Composite Unit

Composite units may be computed in two ways:

Absolute (weighted average) tones- km., quintal- km. etc.

Absolute tonnes-km. are the sum total of tonnes-km. arrived at by multiplying various distances by respective load quantities carried.

Commercial (simple average) tonnes- km., quintal-km. etc.

Commercial tonnes-km., are arrived at by multiplying total distance km., by average load quantity.



COSTING OF TRANSPORT SERVICE

Example: 1

*A lorry starts with a load of 20 MT of goods from Station 'A'. It unloads 8 MT in Station 'B' and balance goods in Station 'C'. On return trip, it reaches Station 'A' with a load of 16 MT, loaded at Station 'C'. The distance between A to B, B to C and C to A are 80 Kms, 120 Kms and 160 Kms, respectively. COMPUTE "Absolute MT- Kilometer" and "Commercial MT – Kilometer".
(MT = Metric Ton or Ton).*

Example: 2

*Calculate total passenger kilometres from the following information:
Number of buses 6, number of days operating in a month 25, trips made by each bus per day 8,
distance covered 20 kilometres (one side), capacity of bus 40 passengers, normally 80% of capacity utilization.*



Example: 3

ABC Transport Company has given a route 40 kilometers long to run bus.

- a) The bus costs the company a sum of ` 10,00,000*
- b) It has been insured at 3% p.a. and*
- c) The annual tax will amount to ` 20,000*
- d) Garage rent is `20,000 per month.*
- e) Annual repairs will be `2,04,000*
- f) The bus is likely to last for 2.5 years*
- g) The driver's salary will be `30,000 per month and the conductor's salary will be `25,000 per month in addition to 10% of takings as commission [To be shared by the driver and conductor equally].*
- h) Cost of stationery will be `1,000 per month.*
- i) Manager-cum-accountant's salary is `17,000 per month.*
- j) Petrol and oil will be `500 per 100 kilometers.*
- k) The bus will make 3 up and down trips carrying on an average 40 passengers on each trip.*
- l) The bus will run on an average 25 days in a month.*

Assuming 15% profit on takings, CALCULATE the bus fare to be charged from each passenger.



Example: 4

Global Transport Ltd. charges ` 90 per ton for its 6-ton truck lorry load from city 'A' to city 'B'. The charges for the return journey are ` 84 per ton. No concession or reduction in these rates is made for any delivery of goods at intermediate station 'C'.

In January 2020, the truck made 12 outward journeys for city 'B' with full load out of which 2 tons were unloaded twice in the way at city 'C'. The truck carried a load of 8 tons in its return journey for 5 times but was once caught by police and ` 1,200 was paid as fine. For the remaining trips the truck carried full load out of which all the goods on load were unloaded once at city 'C', but it returned without any load once only from 'C' station to 'A' station. The distance from city 'A' to city 'C' and city 'B' are 140 km. and 300 km. respectively.

Annual fixed costs and maintenance charges are ` 60,000 and ` 12,000 respectively. Running charges spent during January 2020 are ` 2,944.

You are required to FIND OUT the cost per absolute ton-kilometre and the profit for January, 2020.



Example: 5

A Mineral is transported from two mines – 'A' and 'B' and unloaded at plots in a Railway Station. Mine A is at a distance of 10 km., and B is at a distance of 15 km. from railhead plots. A fleet of lorries of 5 tonne carrying capacity is used for the transport of mineral from the mines. Records reveal that the lorries average a speed of 30 km. per hour, when running and regularly take 10 minutes to unload at the railhead. At mine 'A' loading time averages 30 minutes per load while at mine 'B' loading time averages 20 minutes per load.

Drivers' wages, depreciation, insurance and taxes are found to cost ` 9 per hour operated. Fuel, oil, tyres, repairs and maintenance cost ` 1.20 per km.

Draw up a statement, showing the cost per tonne-kilometer of carrying mineral from each mine.



Example 6

A company presently brings coal to its factory from a nearby yard and the rate paid for transportation of coal from the yard located 6 km away to factory is ` 50 per ton. The total coal to be handled in a month is 24,000 ton .The Company is considering proposal to buy its own truck and has the option of buying either a 10 ton capacity or a 8 ton capacity truck.The following information is available:

Particulars	10 tons	8 tons
Purchase Price (₹)	10,00,000	8,50,000
Life (Year)	5	5
Scrap Value at the end of 5th year	Nil	Nil
K.M. per litre of Diesel	3	4
Repair / Maintenance per Truck p.a. (₹)	60,000	48,000
Other Fixed Expenses p.a. (₹)	60,000	36,000
Lubricants & Sundries per 100 km (₹)	20	20

Each truck will daily make 5 trips (to and fro) on an average for 24 days in a month. Cost of Diesel `15 per litre. Salary of Drivers ` 3,000 per month – Two Drivers will be required for a Truck.

Other staff expenses ` 1,08,000 p.a.

Required

Present a comparative Cost Sheet on the basis of above data showing transport cost per tonne of operating 10 and 8 Truck at full capacity utilisation.



Example: 7

In order to develop tourism, ABCL airline has been given permit to operate three flights in a week between X and Y cities (both side). The airline operates a single aircraft of 160 seats capacity. The normal occupancy is estimated at 60% through out the year of 52 weeks. The one-way fare is ` 7,200. The cost of operation of flights are:

<i>Fuel cost (variable)</i>	<i>` 96,000 per flight</i>
<i>Food served on board on non-chargeable basis</i>	<i>` 125 per passenger</i>
<i>Commission</i>	<i>5% of fare applicable for all booking</i>

Fixed cost:

<i>Aircraft lease</i>	<i>` 3,50,000 per flight</i>
<i>Landing Charges</i>	<i>` 72,000 per flight</i>

Required:

- i. Calculate the net operating income per flight.*
- ii. The airline expects that its occupancy will increase to 108 passengers per flight if the fare is reduced to ` 6,720. Advise whether this proposal should be implemented or not.*

Example 8 (COSTING OF HOTELS)



A hotel is being run in a Hill station with 200 single rooms. The hotel offers concessional rates during six off-season months in a year.

During this period, half of the full room rent is charged. The management's profit margin is targeted at 20% of the room rent. The following are the cost estimates and other details for the year ending 31st March, 2021:

- (i) Occupancy during the season is 80% while in the off-season it is 40%.*
- (ii) Total investment in the hotel is ` 300 lakhs of which 80% relates to Buildings and the balance to Furniture and other Equipment.*
- (iii) Room attendants are paid ` 15 per room per day on the basis of occupancy of rooms in a month.*
- (iv) Expenses :*
 - Staff salary (excluding that of room attendants) ` 8,00,000*
 - Repairs to Buildings ` 3,00,000*
 - Laundry Charges ` 1,40,000*
 - Interior Charges ` 2,50,000*
 - Miscellaneous Expenses ` 2,00,200*



- (v) *Annual Depreciation is to be provided on Buildings @ 5% and 15% on Furniture and other Equipments on straight line method.*
- (vi) *Monthly lighting charges are ` 110, except in four months in winter when it is ` 30 per room and this cost is on the basis of full occupancy for a month.*

You are REQUIRED to workout the room rent chargeable per day both during the season and the off-season months using the foregoing information.

(Assume a month to be of 30 days and winter season to be considered as part of off-season).



Example: 9 (COSTING OF HOSPITALS)

ABC Hospital runs a Critical Care Unit (CCU) in a hired building. CCU consists of 35 beds and 5 more beds can be added, if required.

- a) Rent per month - ` 75,000*
- b) Supervisors (2 persons)– ` 25,000 Per month (each)*
- c) Nurses (4 persons) – ` 20,000 per month (each)*
- d) Ward Boys (4 persons) – ` 5,000 per month (each)*
- e) Doctors paid ` 2,50,000 per month – paid on the basis of number of patients attended and the time spent by them*

Other expenses for the year are as follows:

- a) Repairs (Fixed) – ` 81,000*
- b) Food to Patients (Variable) – ` 8,80,000*
- c) Other services to patients (Variable) ` 3,00,000*
- d) Laundry charges (Variable) – ` 6,00,000*
- e) Medicines (Variable) – ` 7,50,000*
- f) Other fixed expenses – ` 10,80,000*
- g) Administration expenses allocated – ` 10,00,000*



It was estimated that for 150 days in a year 35 beds are occupied and for 80 days only 25 beds are occupied.

The hospital hired 750 beds at a charge of ` 100 per bed per day, to accommodate the flow of patients. However, this does not exceed more than 5 extra beds over and above the normal capacity of 35 beds on any day.

You are required to –

- a) CALCULATE profit per Patient day, if the hospital recovers on an average 2,000 per day from each patient*
- b) FIND OUT Breakeven point for the hospital.*



Example: 10 (COSTING OF IT & ITES)

Following are the data pertaining to Infotech Pvt. Ltd, for the year 2019-20

	Amount (₹)
Salary to Software Engineers (5 persons)	15,00,000
Salary to Project Leaders (2 persons)	9,00,000
Salary to Project Manager	6,00,000
Repairs & maintenance	3,00,000
Administration overheads	12,00,000

The company executes a Project XYZ, the details of the same as are as follows:

- Project duration – 6 months
- One Project Leader and three Software Engineers were involved for the entire duration of the project, whereas Project Manager spends 2 months' efforts, during the execution of the project.
- Travel expenses incurred for the project – ₹1,87,500
- Two Laptops were purchased at a cost of ₹50,000 each, for use in the project and the life of the same is estimated to be 2 years

PREPARE Project cost sheet



Example: 11 (COSTING OF TOLL ROADS)

BHG Toll Plaza Ltd built a 60 km. long highway and now operates a toll plaza to collect tolls from passing vehicles using the same. The company has invested `600 crore to build the road and has estimated that a total of 60 crore vehicles will be using the highway during the 10 years toll collection tenure. Toll Operating and Maintenance cost for the month of April 2020 are as follows:

a) Salary to –

- Collection Personnel (3 Shifts and 4 persons per shift) - `150 per day per person*
- Supervisor (2 Shifts and 1 person per shift) - `250 per day per person*
- Security Personnel (3 Shifts and 2 persons per shift) - `150 per day per person*
- Toll Booth Manager (2 Shifts and 1 person per shift) - `400 per day per person*

b) Electricity – `80,000

c) Telephone – `40,000

d) Maintenance cost – `30 Lacs

The company needs 25% profit over total cost to cover interest and other costs.

Required:

- i. CALCULATE cost per kilometer.*
- ii. CALCULATE the toll rate per vehicle (assume there is only type of vehicle).*



THANK YOU