

Chapter 12

SERVICE COSTING

May 2018	Nov 2018	May 2019	Nov 2019	Nov 2020	Jan 2021	Jul 2021	Dec 2021	May 2022	Nov 2022	May 2023	Nov 2023
10	10	10	15	10	10	10	10	5	5	5	10

BASICS

Introduction	<ul style="list-style-type: none"> Service sector, being a fastest growing sector and having a significant contribution towards the GDP in India, is a very important sector where the role of the cost and management accounting is inevitable. Service costing is also known as Operating Costing.
Application	<ul style="list-style-type: none"> Internal: The service costing is required for in-house services provided by a service cost centre to other responsibility centres as support services. External: it is also required when services are offered to outside customers as a profit centre.
Service vs Product Costing	<ul style="list-style-type: none"> Tangibility: Unlike products, services are intangible and cannot be stored, hence, there is no inventory for the services. Cost Units: Use of Composite cost units for cost measurement and to express the volume of outputs. Material vs Employee Cost: Unlike a product manufacturing, employee (labour) cost constitutes a major cost element than material cost. Traceability of costs: Indirect costs like administration overheads are generally have a significant proportion in total cost of a service as unlike manufacturing sector, service sector heavily depends on support services and traceability of costs to a service may not economically feasible.
Service Cost Unit	<ul style="list-style-type: none"> To compute the Service cost, it is necessary to understand the unit for which the cost is to be computed A composite cost unit may be deemed more appropriate (two measurement units are combined together to know the cost of service or operation. These are called composite cost units.)
Equivalent Cost Units	<ul style="list-style-type: none"> To calculate cost or pricing of two more different grade of services which uses common resources, each grade of service is assigned a weight and converted into equivalent units. Converting services into equivalent units make different grade of services equivalent and comparable.
KPI (Newly Added)	<ul style="list-style-type: none"> Key Performance Indicators (KPIs) are the quantitative and qualitative factors which are commonly used to assess the performance of an organization which are important to achieve its goal. Calculation of Cost or Revenue per KPI helps to the performance against industry standards

Generally used Service Cost Units:

Service industry	Unit of cost (examples)
Transport Services	Passenger- km., (In public transportation) Quintal- km., or Tonne- km. (In goods carriage)
Electricity Supply service	Kilowatt- hour (kWh)
Hospital	Patient per day, room per day or per bed, per operation etc.
Canteen	Per item, per meal etc.
Cinema	Per ticket.
Hotels	Guest Days or Room Days
Bank or Financial Institutions	Per transaction, per services (e.g. per letter of credit, per application, per project etc.)
Educational Institutes	Per course, per student, per batch, per lecture etc.
IT & ITES	Cost per project, per module etc.
Insurance	Per policy, Per claim, Per TPA etc.

Cost Statement in Service	<ul style="list-style-type: none"> It is generally based on variability <ul style="list-style-type: none"> Fixed Costs or Standing charges Variable costs or Operating expenses Semi-variable costs or Maintenance expenses
Sectors Covered	<ul style="list-style-type: none"> Very High Importance: Transport Services High Importance: Hotels, Hospitals, Toll Roads Medium Importance: IT, Education, Insurance, Financial, Power House

COSTING OF TRANSPORT SERVICES

Introduction	<ul style="list-style-type: none"> Transport organizations can be divided into two categories viz. Goods transport and Passenger transport. The cost unit for Goods transport organization is Ton-Kilometer – that means cost of carrying one Ton of goods over a distance of one kilometer. Cost unit for Passenger transport organization is Passenger-Kilometer – that means cost of carrying one Passenger over a distance of one kilometer. 						
Types of Costs	<table border="1"> <tbody> <tr> <td>Standing Charges or Fixed costs:</td> <td>These are the fixed costs that remain constant irrespective of the distance travelled. Example: Insurance, License Fees, Salary to Driver, Conductor, Cleaners, etc. if paid on monthly basis, Garage Costs, Garage Rent, Depreciation if based on time, Taxes, Administration Expenses</td> </tr> <tr> <td>Variable costs or Running costs:</td> <td>These costs are generally associated with the distance travelled. Example: Petrol and Diesel, Lubricant oils, Wages to Driver, Conductor, Cleaners, etc. if it is related to operations, Depreciation (if related to activity), Any other variable costs identified.</td> </tr> <tr> <td>Semi-Variable Costs</td> <td>Example: Repairs and maintenance, Tyres, Spares etc.</td> </tr> </tbody> </table>	Standing Charges or Fixed costs:	These are the fixed costs that remain constant irrespective of the distance travelled. Example: Insurance, License Fees, Salary to Driver, Conductor, Cleaners, etc. if paid on monthly basis, Garage Costs, Garage Rent, Depreciation if based on time, Taxes, Administration Expenses	Variable costs or Running costs:	These costs are generally associated with the distance travelled. Example: Petrol and Diesel, Lubricant oils, Wages to Driver, Conductor, Cleaners, etc. if it is related to operations, Depreciation (if related to activity), Any other variable costs identified.	Semi-Variable Costs	Example: Repairs and maintenance, Tyres, Spares etc.
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Types of Ton KM	Weighted Average or Absolute basis:	This is the sum total of Tonne-Kms arrived by multiplying various distances by respective load quantities carried in each trip. $\sum (\text{Distance} \times \text{Respective Load Quantity})$
	Simple Average or Commercial basis	Average Load in tons \times Total Distance covered It is derived by multiplying total distance of all trips by simple average of load quantity.
If question is silent, we use Absolute Ton KM		

Question 1 (ICAI SM Illustration 2)

AXA Passenger Transport Company is running 5 buses between two towns, which are 40 kms apart. Seating capacity of each bus is 40 passengers. Following details are available from their books, for the month of April:

Particulars	Amount(₹)
Salary of Drivers, Cleaners and Conductors	24,000
Salary to Supervisor	10,000
Diesel and other Oil	40,000
Repairs and Maintenance	8,000
Tax and Insurance	16,000
Depreciation	26,000
Interest	20,000
	1,44,000

Actual passengers carried were 75% of the seating capacity. All the five buses run on all days for the month. Each bus made one round trip per day. CALCULATE cost per passenger – Kilometer.

ANSWER:

Cost per passenger km is ₹ 0.40

Question 2 (ICAI SM Illustration 3)

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

- The bus costs the company a sum of ₹10,00,000
- It has been insured at 3% p.a. and
- The annual tax will amount to ₹20,000
- Garage rent is ₹20,000 per month
- Annual repairs will be ₹2,04,000
- The bus is likely to last for 2.5 years
- 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].
- Cost of stationery will be ₹1,000 per month.
- Manager-cum-accountant's salary is ₹17,000 per month.
- Petrol and oil will be ₹ 500 per 100 kilometers.
- The bus will make 3 up and down trips carrying on an average 40 passengers on each trip.

- I. The bus will run on an average 25 days in a month.

Assuming 15% profit on takings, CALCULATE the bus fare to be charged per passenger-kilometer.

ANSWER:

Fare per passenger km is ₹ 0.9861

Question 3 (ICAI SM Illustration 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).

ANSWER:

Absolute MT Km: 5,600 MT Km and Commercial MT Km: 5,760 MT Km

Question 4 (ICAI SM Illustration 5)

GTC has a lorry of 6-tonne carrying capacity. It operates lorry service from city A to city B for a particular vendor. It charges ₹2,400 per tonne from city 'A' to city 'B' and ₹2,200 per tonne for the return journey from city 'B' to city 'A'. Goods are also delivered to an intermediate city 'C' but no extra charges are billed for unloading goods in-between destination city and no concession in rates is given for reduced load after unloading at intermediate city. Distance between the city 'A' to 'B' is 300 km and distance from city 'A' to 'C' is 140 km.

In the month of January, the truck made 12 journeys between city 'A' and city 'B'. The details of journeys are as follows:

Outward journey	No. of journeys	Load (in tonne)
'A' to 'B'	10	6
'A' to 'C'	2	6
'C' to 'B'	2	4
Return journey	No. of journeys	Load (in tonne)
'B' to 'A'	5	8
'B' to 'A'	6	6
'B' to 'C'	1	6
'C' to 'A'	1	0

Annual fixed costs and maintenance charges are ₹6,00,000 and ₹1,20,000 respectively. Running charges spent during the month of January are ₹2,94,400 (includes ₹12,400 paid as penalty for overloading).

You are required to:

- CALCULATE the cost as per (a) Commercial tonne-kilometer. (b) Absolute tonne-kilometer.
- CALCULATE Net Profit/ loss for the month of January.

ANSWER:

- i. Cost per commercial tonne-km ₹ 7.62, Cost per absolute tonne-km ₹ 7.65
- ii. Net Loss ₹ 1200

Question 5 (ICAI SM Que 2)

Mr. X owns a bus which runs according to the following schedule:

(i)	Delhi to Chandigarh and back, the same day	
	Distance covered:	250 km. one way.
	Number of days run each month:	8
	Seating capacity occupied	90%
(ii)	Delhi to Agra and back, the same day	
	Distance covered:	210 km. one way.
	Number of days run each month:	10
	Seating capacity occupied	85%
(iii)	Delhi to Jaipur and back, the same day	
	Distance covered:	270 km. one way.
	Number of days run each month:	6
	Seating capacity occupied	100%
(iv)	Following are the other details:	
	Cost of the bus	₹12,00,000
	Salary of the Driver	₹24,000 p.m.
	Salary of the Conductor	₹21,000 p.m.
	Salary of the part-time Accountant	₹5,000 p.m.
	Insurance of the bus	₹4,800 p.a.
	Diesel consumption 4km per litre at	₹56 per litre
	Road tax	₹15,915 p.a.
	Lubricant oil	₹10 per 100 km
	Permit fee	₹315 p.m.
	Repairs and maintenance	₹1,000 p.m.
	Depreciation of the bus	@20% p.a.
	Seating capacity of the bus	50 persons

Passenger tax is 20% of the total takings.

CALCULATE the bus fare to be charged from each passenger to earn a profit of 30% on total takings. The fares are to be indicated per passenger for the journeys:

(i) Delhi to Chandigarh (ii) Delhi to Agra and (iii) Delhi to Jaipur.

ANSWER:

- (i) Delhi to Chandigarh ₹ 225
- (ii) Delhi to Agra ₹ 189
- (iii) Delhi to Jaipur ₹ 243

Question 6 (ICAI SM Illustration 4)

SMC is a public school having five buses each plying in different directions for the transport of its school students. In view of a larger number of students availing of the bus service the buses work two shifts daily both in the morning and in the afternoon. The buses are garaged in the school. The work-load of the students has been so arranged that in the morning the first trip picks up senior students and the second trip plying an hour later picks up the junior students. Similarly, in the afternoon the first trip takes the junior students and an hour later the second trip takes the senior students' home.

The distance travelled by each bus one way is 8 km. The school works 25 days in a month and remains closed for vacation in May, June and December. Bus fee, however, is payable by the students for all 12 months in a year.

The details of expenses for a year are as under:

Driver's salary	₹4,500 per month per driver
Cleaner's salary (Salary payable for all 12 months) (One cleaner employed for all the five buses)	₹3,500 per month
License fee, taxes, etc.	₹8,600 per bus per annum
Insurance	₹10,000 per bus per annum
Repairs & maintenance	₹35,000 per bus per annum
Purchase price of the bus	₹15,00,000 each
Life of each bus	12 years
Scrap value of buses at the end of life	₹3,00,000
Diesel cost	₹45.00 per litre

Each bus gives an average mileage of 4 km. per litre of diesel.

Seating capacity of each bus is 50 students.

The seating capacity is fully occupied during the whole year.

Students picked up and dropped within a range up to 4 km. of distance from the school are charged half fare and fifty per cent of the students travelling in each trip are in this category. Ignore interest. Since the charges are to be based on average cost you are required to:

- i. PREPARE a statement showing the expenses of operating a single bus and the fleet of five buses for a year.
- ii. WORK OUT the average cost per student per month in respect of –
 - a. students coming from a distance of upto 4 km. from the school and
 - b. students coming from a distance beyond 4 km. from the school.

ANSWER:

- i. Operating Expenses for the year: Single Bus ₹ 3,78,000, Fleet of 5 buses ₹ 18,90,000
- ii. Average Cost per student per month: up to 4 km ₹ 210 and beyond 4 km ₹ 420

Question 7 (ICAI SM Que 3)

A company is considering three alternative proposals for conveyance facilities for its sales personnel who has to do considerable traveling, approximately 20,000 kilometers every year. The proposals are as follows:

- i. Purchase and maintain its own fleet of cars. The average cost of a car is ₹6,00,000.
- ii. Allow the Executive use his own car and reimburse expenses at the rate of ₹10 per kilometer and also bear insurance costs.
- iii. Hire cars from an agency at ₹1,80,000 per year per car. The company will have to bear costs of petrol, taxes and tyres.

The following further details are available:

Petrol ₹6 per km	Repairs and maintenance ₹0.20 per km.
Tyre ₹ 0.12 per km.	Insurance ₹1,200 per car per annum
Taxes ₹ 800 per car per annum	Life of the car: 5 years with annual mileage of 20,000 km.

Resale value: ₹80,000 at the end of the fifth year.

WORK OUT the relative costs of three proposals and rank them

ANSWER:

Option	Description	Ranking
I	Use of company's car	II
II	Use of own car	I
III	Use of hired car	III

COSTING OF HOTELS AND LODGES

Introduction	<ul style="list-style-type: none"> • Service costing is an effective tool in respect of hotel industry. Hotels runs for Profits. Hence it is necessary to compute the cost - to fix the price of various services provided by the hotel and to find out the profit or loss at the end of a particular period. • In this case, the costs associated with different services offered should be identified and cost per unit should be worked out. • For calculation of cost per Guest day or Room day, estimated occupancy rate – at different point of time, for example – Peak season or Off season, are taken into account. • There is no requirement of format – Standing, running etc.
Cost Unit	<ul style="list-style-type: none"> • The cost unit may be Guest-day or Room day.

Question 8 (ICAI SM Illustration 6)

A company runs a holiday home. For this purpose, it has hired a building at a rent of ₹ 10,000 per month along with 5% of total taking. It has three types of suites for its customers, viz., single room, double rooms and triple rooms.

Following information is given:

Type of suite	Number	Occupancy percentage
Single room	100	100%
Double rooms	50	80%
Triple rooms	30	60%

The rent of double rooms suite is to be fixed at 2.5 times of the single room suite and that of triple rooms suite as twice of the double room's suite.

The other expenses for the year 2022-23 are as follows:

	(₹)
Staff salaries	14,25,000
Room attendants' wages	4,50,000
Lighting, heating and power	2,15,000
Repairs and renovation	1,23,500
Laundry charges	80,500
Interior decoration	74,000
Sundries	1,53,000

Provide profit @ 20% on total taking and assume 360 days in a year.

You are required to CALCULATE the rent to be charged for each type of suite.

ANSWER:

Suite	Single Room	Double Room	Triple Room
Rent	₹ 33.73	₹ 84.33	₹ 168.65

Question 9 (ICAI SM Illustration 7)

A lodging home is being run in a small hill station with 100 single rooms. The home offers concessional rates during six off- season months in a year when numbers of visitor are limited. 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 on 31st March. [Assume a month to be of 30 days].

- i. Occupancy during the season is 80% while in the off- season it is 40% only.
- ii. Total investment in the home is ₹200 lakhs of which 80% relate to buildings and balance for furniture and equipment.
- iii. Expenses:
 - Staff salary [Excluding room attendants] : ₹5,50,000
 - Repairs to building : ₹2,61,000
 - Laundry charges : ₹80,000
 - Interior : ₹1,75,000
 - Miscellaneous expenses : ₹1,90,800

- iv. Annual depreciation is to be provided for buildings @ 5% and on furniture and equipment @ 15% on straight-line basis.
- v. Room attendants are paid ₹ 10 per room day on the basis of occupancy of the rooms in a month.
- vi. Monthly lighting charges are ₹120 per room, except in four months in winter when it is ₹30 per room.

You are required to WORK OUT the room rent chargeable per day both during the season and the off-season months on the basis of the foregoing information.

ANSWER:

	Season	Off-Season
Room Rent Chargeable per day	₹ 204.5	₹ 102.25

COSTING OF HOSPITALS

Introduction	<ul style="list-style-type: none"> A Hospital is providing various types of medical services to the patients. Hospital costing is applied to decide the cost of these services.
Cost Unit	<ul style="list-style-type: none"> Common unit of costs of various departments are as follows: <ul style="list-style-type: none"> - Out Patient – Per Out-patient - In Patient – Per Room Day - Scanning – Per Case - Laundry – Per 100 items laundered
Types of Costs	<p>The cost of hospital can be divided in to fixed costs and variable costs.</p> <ul style="list-style-type: none"> Fixed costs are based on timelines and irrespective of services provided. For example, Staff salaries, Depreciation on Building and Equipment, etc. Variable costs vary with the level of services rendered. For example, Laundry charges, Cost of food supplied to patients, Power, etc.

Question 10 (ICAI SM Illustration 8)

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.

Rent per month - ₹75,000

Supervisors – 2 persons – ₹25,000 Per month – each

Nurses – 4 persons – ₹20,000 per month – each

Ward Boys – 4 persons – ₹5,000 per month – each

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:

Repairs (Fixed) – ₹81,000

Food to Patients (Variable) – ₹8,80,000

Other services to patients (Variable) – ₹3,00,000

Laundry charges (Variable) – ₹6,00,000

Medicines (Variable) – ₹7,50,000

Other fixed expenses – ₹10,80,000

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 –

- CALCULATE profit per Patient day, ₹2,000 per day from each patient
- FIND OUT Breakeven point for the CCU of hospital.

ANSWER:

- Profit per patient day ₹ 691.75
- Breakeven Point 3741 patient days

COSTING OF TOLL ROADS

Introduction	<ul style="list-style-type: none"> The Construction of roads brings about a variety of benefits that are enjoyed practically by all sectors of the economy. Highway economic analysis is a technique whereby the cost and benefit from a scheme are quantified over a selected time horizon and evaluated by a common yardstick.
Capital Costs	<ul style="list-style-type: none"> The total expenditure to be incurred during the construction period is termed as capital cost. It includes the cost of construction of road and other structures and consultancy charges and construction of tollbooths. Construction expenses can be broadly classified as: Preliminary and Pre-Operative Expenses, Land Acquisition, Materials, Labour, Overheads during actual construction period, Contingency allowance, Interest during construction period.
Operating and Maintenance Costs	<ul style="list-style-type: none"> Routine maintenance cost would be incurred once the Toll road is operational. Routine maintenance involves Patching of potholes, sealing of cracks, Edge Repair, Surface Renewal etc. Annual operating cost includes the cost of operating tollbooths, administrative expenses, emergency services, communications and security services and other costs of operation.
BOT Approach	<ul style="list-style-type: none"> In recent years a growing trend emerged among Governments in many countries to solicit investments for public projects from the private sector under BOT scheme. BOT is an option for the Government to outsource public projects to the private sector.

	<ul style="list-style-type: none"> • With BOT, the private sector designs, finances, constructs and operate the facility and eventually, after specified concession period, the ownership is transferred to the Government. Therefore, BOT can be seen as a developing technique for infrastructure projects by making them amenable to private sector participation. • The fundamental principle in determining user levy is, 'if the price for a transport facility is set at a level that reflects the benefit, each user gains from improvements in the facility, it will result in traffic flow levels that equate social costs with user benefits.
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Question 11 (ICAI SM Illustration 10)

BHG Toll Plaza Ltd built a 60 km. long highway and now operates a toll plaza to collect tolls from passing vehicles using the highway. The company has estimated that a total of 12 crore vehicles (only single type of vehicle) will be using the highway during the 10 years toll collection tenure.

Toll Operating and Maintenance cost for the month of April are as follows:

- i. Salary to –
 - Collection Personnel (3 Shifts and 4 persons per shift) - ₹550 per day per person
 - Supervisor (2 Shifts and 1 person per shift) - ₹750 per day per person
 - Security Personnel (3 Shifts and 6 persons per shift) - ₹450 per day per person
 - Toll Booth Manager (2 Shifts and 1 person per shift) - ₹900 per day per person
- ii. Electricity – ₹8,00,000
- iii. Telephone – ₹1,40,000
- iv. Maintenance cost – ₹30 Lakh

Monthly depreciation and amortisation expenses will be ₹ 1.50 crore. Further, the company needs 25% profit over total cost to cover interest and other costs.

Required:

- i. CALCULATE cost per kilometer per month.
- ii. CALCULATE the toll rate per vehicle.

ANSWER:

- i. Cost per kilometer per month ₹ 3,24,666.67
- ii. Toll rate per vehicle ₹ 24.35

Question 12 (ICAI SM Que 1)

SLS Infrastructure built and operates 110 k.m. highway on the basis of BuiltOperate-Transfer (BOT) for a period of 25 years. A traffic assessment carried out to estimate the traffic flow per day shows the following figures:

SL. No.	Type of Vehicle	Daily traffic volume
1.	Two wheelers	44,500
2.	Car and SUVs	3,450
3.	Bus and LCV	1,800
4.	Heavy commercial vehicles	816

The following is the estimated cost of the project:

SL. No.	Activities	Amount (₹ in lakh)
1.	Site clearance	170.70
2.	Land development and filling work	9,080.35
3.	Sub base and base courses	10,260.70
4.	Bituminous work	35,070.80
5.	Bridge, flyovers, underpasses, pedestrian subway, footbridge, etc	29,055.60
6.	Drainage and protection work	9,040.50
7.	Traffic sign, making and road appurtenance	8,405.00
8.	Maintenance, repairing and rehabilitation	12,429.60
9.	Environmental management	982.00
	Total project cost	114,495.25

An estimated cost of ₹1,120 lakh has to be incurred on administration and toll plaza operation.

On the basis of the vehicle specifications (i.e. weight, size, time saving etc.), the following weights has been assigned to the passing vehicles:

SL. No.	Type of Vehicle	
1.	Two wheelers	5%
2.	Car and SUVs	20%
3.	Bus and LCV	30%
4.	Heavy commercial vehicles	45%

Required:

- CACULATE the total project cost per day of concession period.
- COMPUTE toll fee to be charged for per vehicle of each type, if the company wants to earn a profit of 15% on total cost.

[Note: Concession period is a period for which an infrastructure is allowed to operate and recovers its investment]

ANSWER:

- Total project cost per day of concession period ₹ 12.67 lakhs
- Toll fee to be charged for per vehicle of each type: (₹)

Two wheelers	Car and SUVs	Bus and LCV	Heavy Commercial Vehicles
19.06	76.24	114.36	171.54

COSTING OF IT and ITES

Introduction	
	<ul style="list-style-type: none"> Information Technology (IT) and Information Technology Enabled Services (ITES) organizations provide their customers with services or intangible products. These organizations are highly labour intensive. In this sector employee (labour) cost constitutes a significant portion of the total operating costs. In addition to employee cost, significant overhead

	costs for offering the services are incurred and are classified as service overhead.
Concept of Project	<ul style="list-style-type: none"> In general – IT & ITES industries, the jobs undertaken are considered as Project. Each project is unique in nature and varies in size, functionality requirements, duration, and staffing requirements.
Types of Cost in IT/ ITES	<ul style="list-style-type: none"> Direct Manpower: Depending on the nature and complexities of the projects being implemented, the number of persons engaged, their levels and duration of the engagement varies. Usual roles are Software Engineers / Functional Consultants / Business Analysts, Project Leaders, Project Manager, Program Manager, etc. Support Manpower: In addition to the above persons, who are directly engaged in project, there could be support persons or indirect manpower, who are indirectly involved in the project. Examples: Quality Assurance Team, Testing Team, Version Control team, Staffing Manager, etc who are indirectly support the projects by providing required level of support services over the life of the projects. Other Costs: Hardware, Software, Travel, Training, etc.

Question 13 (ICAI SM Illustration 9)

Following are the data pertaining to Infotech Pvt. Ltd, for the year 2022-23:

	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.

ANSWER:

Total Project Cost ₹ 13,75,000

COSTING OF EDUCATIONAL INSTITUTIONS

Introduction	<ul style="list-style-type: none"> • Educational institutions like schools, colleges, and technical institutes for education and training, are run to impart education and training to students. • The objective of running these institutions may be 'Not-for profit' or 'For profit'. • Like other business entities, cost and management accounting is also inevitable for this sector. • The Government, Local body of any other organisation which provides education and training to students with an objective to benefit and upliftment of the society, are also need cost and management accounting system for cost-social benefit analysis, allocation of funds and budgeting (zero-based budgeting), performance measurement and evaluation etc.
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Question 14 (ICAI SM Illustration 11)

AD Higher Secondary School (AHSS) offers courses for 11th & 12th standard in three streams i.e. Arts, Commerce and Science. AHSS runs higher secondary classes along with primary and secondary classes, but for accounting purpose it treats higher secondary as a separate responsibility centre. The Managing committee of the school wants to revise its fee structure for higher secondary students. The accountant of the school has provided the following details for a year:

	Amount (₹)
Teachers' salary (25 teachers × ₹35,000 × 12 months)	1,05,00,000
Principal's salary	14,40,000
Lab attendants' salary (2 attendants × ₹15,000 × 12 months)	3,60,000
Salary to library staff	1,44,000
Salary to peons (4 peons × ₹10,000 × 12 months)	4,80,000
Salary to other staffs	4,80,000
Examinations expenditure	10,80,000
Office & Administration cost	15,20,000
Annual day expenses	4,50,000
Sports expenses	1,20,000

Other information:

i.

	Standard 11 & 12			Primary & Secondary
	Arts	Commerce	Science	
No. of students	120	360	180	840
Lab classes in a year	0	0	144	156
No. of examinations in a year	2	2	2	2
Time spent at library by students per year	180 hours	120 hours	240 hours	60 hours
Time spent by principal for administration	208 hours	312 hours	480 hours	1,400 hours
Teachers for 11 & 12	4	5	6	10

standard				
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- ii. One teacher who teaches economics for Arts stream students also teaches commerce stream students. The teacher takes 1,040 classes in a year, it includes 208 classes for commerce students.
- iii. There is another teacher who teaches mathematics for Science stream students also teaches business mathematics to commerce stream students. She takes 1,100 classes a year, it includes 160 classes for commerce students.
- iv. One peon is fully dedicated for higher secondary section. Other peons dedicate their 15% time for higher secondary section.
- v. All school students irrespective of section and age participates in annual functions and sports activities.

Required:

- a. CALCULATE cost per student per annum for all three streams.
- b. If the management decides to take uniform fee of ₹1,000 per month from all higher secondary students, CALCULATE stream wise profitability.
- c. If management decides to take 10% profit on cost, COMPUTE fee to be charged from the students of all three streams respectively.

ANSWER:

- a. Cost per student per annum for all three streams

	Arts	Commerce	Science
Cost per student per month	17,397	9,533	19,238

- b. Stream wise profitability

	Arts	Commerce	Science
Profit/ Loss per student per month	(5,397)	2,467	(7,238)
Total Profit/ Loss	(6,47,640)	8,88,120	(13,02,840)

- c. Fee to be charged from the students of all three streams respectively.

	Arts	Commerce	Science
Fees per annum	19,137	10,486	21,162
Fees per month	1,595	874	1,764

COSTING OF INSURANCE COMPANIES**Introduction**

- Insurance or assurance industry operates in providing **social security** to the persons who subscribe for the policy.
- The Insurance companies are broadly classified as **Life** insurer and **Non-Life** Insurer (General Insurance providers).
- Life insurers provide insurance to the policy holders' **life** for the insured value.
- The Non-life insurers are providing insurance to the policyholder for actual loss upto insured value for the policy.
- The insurance companies are need to analyse it various insurance product for profitability.

Products offered by Insurance Companies	<ul style="list-style-type: none"> Life Insurance policies - with or without maturity benefits General insurance- Health, Fire, Property, Travel Insurance etc. Other services- Re-insurance, Fund management- Pension, Gratuity and other etc.
Sources of Income	<ul style="list-style-type: none"> Premium on policy (periodic or onetime) Commission on re-insurance Fund administration fee and return on investment of funds etc.
Expenditure of Insurance Companies	<ul style="list-style-type: none"> Direct Costs: Commission paid to agents, claim settlement, cost of valuation, premium for re-insurance, legal and other costs etc. Indirect Costs: Actuarial fees, market and product development costs, administration cost, asset management cost etc.
Cost Object	<ul style="list-style-type: none"> The cost object in an insurance company may be a product, a policy, a department or region, an agent etc.
Costing using ABC	<ul style="list-style-type: none"> Activity based costing (ABC) is used for analysis of cost-benefit of a product (Direct Product Profitability), policy profitability (Customer Profitability Analysis) etc.
Identification of Activities	<ul style="list-style-type: none"> Pre-product development activities: These are the activities which are carried out before a product is made. It includes market research, product development like specification of coverage, conditions, amount of premium, insurance contract, policy forms and provision for sales channel etc. Post product development activities: This activity is further divided into parts i.e. (a) Selling of policy and (b) Processing of claims. (a) Selling of policy refers to appointment of distribution of sales channel (direct selling or through agencies), soliciting for policy, processing of applications etc. (b) Processing of claim includes claim inception, claim estimation, claim settlement, legal actions.

Question 15 (ICAI SM Illustration 12)

Sanziet Lifecare Ltd. operates in life insurance business. Last year it launched a new term insurance policy for practicing professionals 'Professionals Protection Plus'. The company has incurred the following expenditures during the last year for the policy:

	Amount (₹)
Policy development cost	11,25,000
Cost of marketing of the policy	45,20,000
Sales support expenses	11,45,000
Policy issuance cost	10,05,900
Policy servicing cost	35,20,700
Claims management cost	1,25,600
IT cost	74,32,000
Postage and logistics	10,25,000
Facilities cost	15,24,000
Employees cost	5,60,000
Office administration cost	16,20,400

Number of policies sold- 528

Total insured value of policies- ₹1,320 crore

Required:

- i. CALCULATE total cost for Professionals Protection Plus policy segregating the costs into four main activities namely (a) Policy Development, Marketing and Sales support, (b) Operations, (c) IT and (d) Support functions.
- ii. CALCULATE cost per policy.
- iii. CALCULATE cost per rupee of insured value.

ANSWER:

- ii. Cost per policy ₹ 44,703.79
- iii. Cost per rupee of insured value ₹ 0.0018

COSTING IN FINANCIAL INSTITUTIONS

Introduction	<ul style="list-style-type: none"> • In the past two decade financial institutions have undergone major changes – in terms to increased regulations, competition from new entrants from both locally and globally, innovation of new products and services, technological advancement and increased expectations of new generation customers, etc.
Cost	<ul style="list-style-type: none"> • Manpower cost, other than interest cost and finance charges, is one of the largest single cost components in financial institutions. Hence, it is needless to say, that financial institutions are more interested in understanding and discovering the ways to more accurately allocate such costs to various product ranges offered by them and its customers. • Concept of ABC applies in FI also.

Question 16 (ICAI SM Illustration 13)

The loan department of a bank performs several functions in addition to home loan application processing task. It is estimated that 25% of the overhead costs of loan department are applicable to the processing of home-loan application. The following information is given concerning the processing of a loan application:

Direct professional labor:

	(₹)
Loan processor monthly salary: (4 employees @ ₹ 60,000 each)	<u>2,40,000</u>
Loan department overhead costs (monthly)	
Chief loan officer's salary	75,000
Telephone expenses	7,500
Depreciation Building	28,000
Legal advice	24,000
Advertising	40,000
Miscellaneous	6,500
Total overhead costs	1,81,000

You are required to COMPUTE the cost of processing home loan application on the assumption that five hundred home loan applications are processed each month.

ANSWER: Processing cost per home loan application ₹ 570.5

COSTING IN POWER HOUSES

Introduction	<ul style="list-style-type: none"> Power houses are engaged either in electricity generation or steam generation use the concepts of service costing i.e. 'Power House Costing.' Service cost statement can be prepared by identifying the costs associated with the power generation or steam generation. The cost unit for electricity generation organization is cost per kilowatt-hour (kWh) – that means cost of generating one kilowatt of power per hour
Types of Costs	<ul style="list-style-type: none"> Standing Charges/ Fixed Costs: Rent, Rates & Taxes, Insurance, Depreciation, Salaries, Administration Expenses etc. Variable Costs: Fuel Charges, Water Charges, Wages, etc. Semi-variable Costs: Meters, Furnaces, Service Materials, Tools etc.

Question 17 (ICAI SM Illustration 14)

PREPARE the cost statement of Ignus Thermal Power Station showing the cost of electricity generated per kWh, from the data provided below pertaining to the year 2022-23.

Total units generated 20,00,000 kWh

	Amount (₹)
Operating labour	30,00,000
Repairs & maintenance	10,00,000
Lubricants, spares and stores	8,00,000
Plant supervision	6,00,000
Administration overheads	40,00,000

5 kWh. of electricity generated per kg of coal consumed @ ₹4.25 per kg. Depreciation charges @ 5% on capital cost of ₹5,00,00,000.

ANSWER: Total Cost: 1,36,00,000, Cost per kWh: 6.80

Question 18 (ICAI SM Illustration 15 – NEWLY ADDED)

Solar Power Ltd. has a power generation capacity of 1000 Megawatt per day. On an average it operates at 85% of its installed capacity. The cost structure of the plant is as under:

	Cost particulars	Amount (₹in lakh)
1.	Employee cost per year	2500
2.	Solar panel maintenance cost per year	250
3.	Site maintenance cost per year	150
4.	Depreciation per year	5940

CALCULATE cost of generating 1kW of power.

[1 Megawatt = 1,000 kW]

ANSWER:

Cost of generating 1kW of Power 2.84