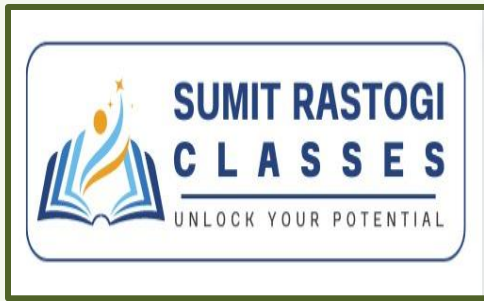




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TEST PAPER – 04

(CHAPTERS COVERED – OPERATING COSTING & CONTRACT COSTING)

COST ACCOUNTING

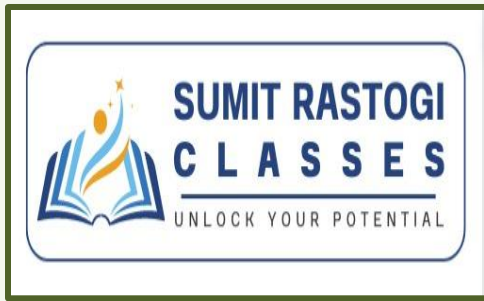
Time Allowed: 3 Hours

Full Marks: 100

**Section A contains Question Number 1. All parts of this question are compulsory.
Working notes should form part of the relevant answer.**

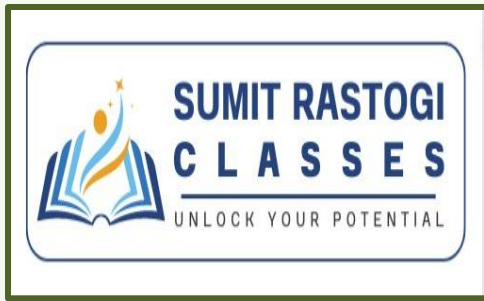
SECTION-A

- 1. Choose the correct answer from the given alternatives (you may write only the Roman number and the alphabet chosen for your answer) (2×15 = 30 Marks)**
- (i) **Absolute Tonne-km. is an example of:**
(a) Composite unit of transport sector
(b) Composite unit for bus operation
(c) Composite unit for oil and natural gas
(d) Composite unit in power sector
- (ii) **_____ is to provide for any future decrease in price etc., so that the benefit may be passed on to the contractee.**
(a) Retrospective Clause
(b) Contract Clause
(c) Escalation Clause
(d) Reserve Clause
- (iii) **GYANI Transporter is running 8 buses between two cities which are 90 kilometers apart. Seating capacity of each bus is 52 passengers but actual capacity is 80%. Calculate the total passenger kilometers for the month of May 2015.**
(a) 9,28,512 passengers kms.
(b) 18,57,024 passengers kms.
(c) 13,52,570 passengers kms.
(d) 12,72,240 passengers kms.



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- (iv) A hotel having 100 rooms of which 80% are normally occupied in summer and 25% in winter. Period of summer and winter be taken as 6 months each and normal days in a month be assumed to be 30. The total occupied room days will be:
- (a) 36000 Room days
 - (b) 18900 Room days
 - (c) 1525 Room days
 - (d) None of the above
- (v) A hospital is open or 365 days, but bed occupancy is 25 patients per day for 120 days and 20 beds occupied for another 80 days. Extra beds occupied during the year is 400. The patient-days of the hospital is:
- (a) 3,500
 - (b) 4,000
 - (c) 5,000
 - (d) 4,600
- (vi) Operating costing is applicable to:
- (a) Cinemas
 - (b) Transport undertaking
 - (c) Hospitals
 - (d) All of the above
- (vii) A JBC machine was used on a contract site for the period of 7 months and depreciation on it was charged to the contract ₹78,750. If the working life of the machine is 5(five) years and salvage value is ₹25,000, then the cost of JBC machine will be:
- (a) ₹7,00,000
 - (b) ₹6,75,000
 - (c) ₹4,18,750
 - (d) ₹3,93,750
- (viii) Cost plus contract is usually entered into those cases where:
- (a) Cost of certified work
 - (b) Cost can be easily estimated
 - (c) Cost of certified and uncertified work
 - (d) None of the above



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- (ix) Calculate the most appropriate unit cost for a distribution division of a multinational company using the following information.

Miles travelled	6,36,500
Tonnes carried	2,479
Number of drivers	20
Hours worked by drivers	35,520
Tonnes-miles carried	3,75,200
Costs incurred	₹5,62,800

- (a) ₹28,140
(b) ₹15.84
(c) ₹1.50
(d) ₹0.88

- (x) Cost of a particular service under operating costing is ascertained by preparing:

- (a) Production account
(b) Job cost sheet
(c) Process account
(d) Cost sheet

- (xi) Composite cost unit for a hospital is:

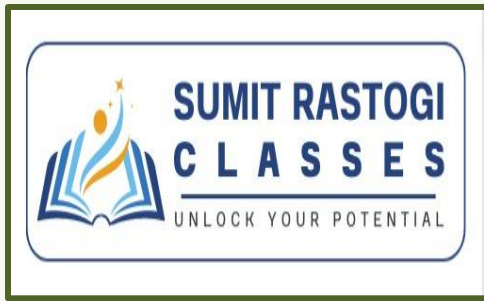
- (a) Per patient
(b) Per bed
(c) Per day
(d) Per patient day

- (xii) A hotel has 80 standard twin-bedded rooms. The hotel is fully occupied for each of the 350 days in each year that it is open. The total costs of running the hotel each year are ₹33,60,000. Calculate the cost per room/day.

- (a) ₹360
(b) ₹240
(c) ₹120
(d) None of the above

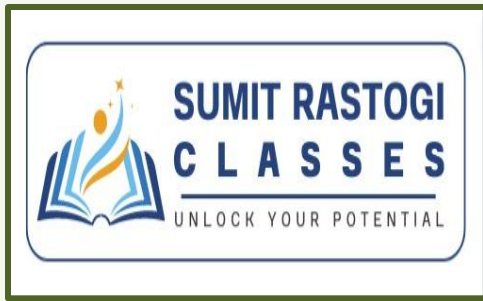
- (xiii) A road haulage company transports goods. It operates two trucks. During a particular period, the two trucks travelled a total of 80,000 kilometers carrying goods. The average load was 3 tonnes per journey. In total they made 200 journeys. Total cost were ₹7,20,000. What is the average cost per tonne-kilometer transported?

- (a) ₹12
(b) ₹6
(c) ₹4.50
(d) ₹3



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- (xiv) A road building company has the following data concerning one of its contracts.
- | | | |
|--------------------------------|------|--------------|
| Contract price | ---- | ₹1,12,00,000 |
| Cost of work certified to date | ---- | ₹37,63,200 |
| Estimated costs to completion | ---- | ₹29,56,800 |
- No difficulties are foreseen on the contract.
The profit to be recognized on the contract to date is ₹_____
- (a) ₹25,08,800
(b) ₹20,58,800
(c) ₹25,80,800
(d) ₹25,88,000
- (xv) In the month of Contract A/c, work completed and not yet certified will be shown
- (a) At cost plus notional profit less retention money under 'Completed Work'.
(b) At cost plus $2/3^{\text{rd}}$ of the notional profit under 'Completed Work'.
(c) At cost under WIP A/c
(d) At cost under 'Completed Work'



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SECTION-B

Answer any five questions from question number 2 to 8.

14x5=70

2 (a) M/s Trans India Transport Company is running 5 buses between two towns which are 60 kms. Away. Seating capacity of each bus is 40 passengers. The following information is obtained from its books for the month of January, 2023:

Particulars	₹
Wages of drivers, conductors and cleaners	80,000
Salaries of office and supervisory staff	25,000
Diesel, oil and other lubricants	60,000
Repairs and maintenance	12,000
Taxes, insurance etc.	20,000
Depreciation of buses	35,000
Interest and other charges	20,000

Actual passengers carried were 80% of the seating capacity. All the 5 buses ran on all the days of the month. Each bus made two to and from round trip per day.

REQUIRED: Prepare the Operating Cost Statement and determine the cost per passenger km. for each bus. (7 Marks)

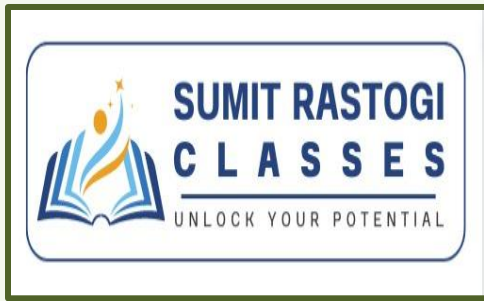
2 (b) M/s. Goyal Brothers accepted a contract for the construction of a building for ₹10,00,000. Construction work started on 1st July, 2022 and the firm usually closes its books of account for the year on 31st March of each year. The contractee agreed to pay 90% of work certified as certified by the architect. During the first year, the amount spent was as follows:

Particulars	₹
Material and stores	1,20,000
Labour charges	1,50,000
Plant issued	30,000
Salaries and other expenses	90,000
Plant at site (Year-end)	20,000
Material at site (Year-end)	5,000
Work certified	4,00,000
Work uncertified	15,000

Further Information:

- (i) Materials costing ₹6,000 was damaged during the year.
- (ii) A supervisor who devotes one-half of his time on the contract has an outstanding salary for 2 months. He is paid @₹4,000 per month.
- (iii) A special machine was hired for the contract for 4 months @₹500 per month.

REQUIRED: Prepare Contract Account in the books of the firm. Also show the amount of profit that can be transferred to the profit and loss account. (7 Marks)



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3 (a) Rajput Transport Service is a Delhi based national goods transport service provider, owning five trucks for this purpose. The cost of running and maintaining these trucks are as follows:

Particulars	Amount (₹)
Diesel Cost	₹30 per km
Engine Oil	₹8400 for every 28,000 kms
Repairs and maintenance	₹24,000 for every 20,000 kms
Driver's Salary	₹40,000 per truck per month
Cleaner's Salary	₹14000 per truck per month
Supervision and other general expenses	₹30,000 per month
Cost of loading of goods	₹400 per metric ton (MT)

Each truck was purchased for ₹30 lakhs with an estimated life of 7,20,000 km. During the next month, it is expecting 6 bookings, the details of which are as follows:

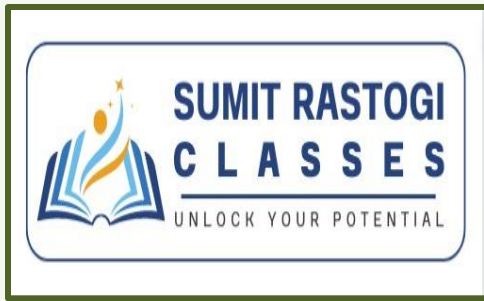
Journey	Distance (Km.)	Weight-up (MT)	Weight-Down (MT)
Delhi to Kochi	2,700	15	7
Delhi to Guwahati	1,890	13	0
Delhi to Vijaywada	1,840	16	0
Delhi to Varanasi	815	11	0
Delhi to Asansol	1,280	13	5
Delhi to Chennai	2,185	11	9
Total	10,710	79	21

REQUIRED:

(i) What is the total absolute ton-km for the next month?

(ii) The cost per ton-km would be how much?

(7 Marks)



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3 (b) Zenith 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 were paid ₹2,50,000 per month on the basis of number of patients attended and the time spent by them.

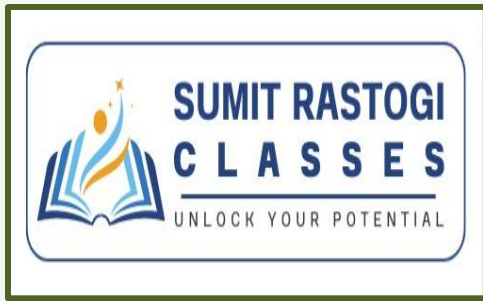
Other expenses for the year are as follows:

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 25 beds are occupied for 80 days only.
- 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 Break-even point for the hospital.
- (7 Marks)



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4 (a) M/s. Hotel Kings Highway has a capacity of 200 single rooms and 50 double rooms. The average occupancy of both single and double rooms is expected to be 80% throughout the year of 365 days. The rent for double room has been fixed at 150% of the rent of a single room. The costs are as under:

Variable costs:

- Single rooms ₹440 each per day
- Double rooms ₹700 each per day

Fixed costs:

- Single rooms ₹240 each per day
- Double rooms ₹500 each per day

REQUIRED: Calculate the rent chargeable for single and double rooms per day in such a way that the hotel earns a margin of safety of 20% on rent of rooms. (7 Marks)

4 (b) NIRVANA LTD. undertook a contract for ₹50,00,000 on 1st April, 2018. On 31st March, 2019 when the accounts of the company were closed, the following details about the contract were gathered:

Particulars	Amount (₹)
Materials purchased	10,00,000
Wages paid	4,50,000
General expenses	1,00,000
Plant purchased	5,00,000
Materials on hand on 31-03-2019	2,50,000
Wages accrued on 31-03-2019	50,000
Work certified	20,00,000
Cash received	15,00,000
Work uncertified	1,50,000
Depreciation of plant	50,000

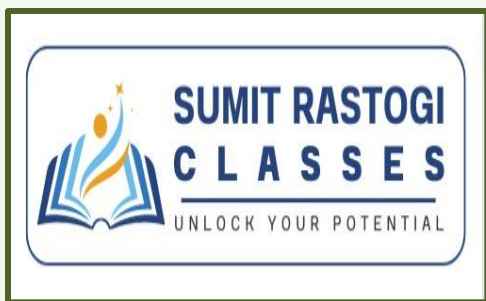
The above contract contained an escalation clause which read as follows:

"In the event of prices of materials and rates of wages increase by more than 5%, the contract price would be increased accordingly by 25% of the rise in the cost of materials and wages beyond 5% in each case."

It was found that since the date of signing the agreement, the price of materials and wage rates increased by 25%. The value of work certified does not take into account the effect of the above clause.

REQUIRED: Prepare Contract Account of the company as on 31st March, 2019.

7 Marks



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5 (a) EPS is a Public School having 25 buses each plying in different directions for the transport of its school students. In view of large 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 workload 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 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 16 kms. The school works 24 days in a month and remains closed for vacation in May and June. The bus fee, however, is payable by the students for all the 12 months in a year.

The details of expenses for the year 2003-2004 are as under:

Driver's salary – payable for all the 12 months.	₹ 5,000 per month per driver.
Cleaner's salary payable for all the 12 months (one cleaner has been employed for every five buses).	₹3,000 per month per cleaner
Licence Fees, Taxes etc.	₹ 2,300 per bus per annum
Insurance Premium	₹ 15,600 per bus per annum
Repairs and Maintenance	₹ 16,400 per bus per annum
Purchase price of the bus	₹ 16,50,000 each
Life of the bus	16 years
Scrap value	₹ 1,50,000
Diesel Cost	₹ 18.50 per liter

Each bus gives an average of 10 kms per liter of diesel. The seating capacity of each bus is 60 students. The seating capacity is fully occupied during the whole year.

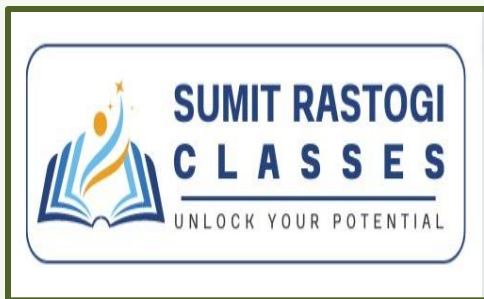
The school follows differential bus fees based on distance traveled as under:

Students picked up and dropped within the range of distance from the school	Bus fee	Percentage of students availing this facility
4 kms	25% of Full	15%
8 kms	50% of Full	30%
16 kms	Full	55%

Ignore interest. Since the bus fees has to be based on average cost, **you are required to:**

- Prepare a statement showing the expenses of operating a single bus and the fleet of 25 buses for a year.**
- Work out average cost per student per month in respect of:**
 - Students coming from a distance of upto 4 kms from the school.
 - Students coming from a distance of upto 8 kms from the school; and
 - Students coming from a distance of upto 16 kms from the school

(8 Marks)



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5 (b) The following information relating to two vehicles is given. Prepare the operating Cost Statements and determine the cost per running kilometer for each vehicle.

Particulars	Vehicle A (₹)	Vehicle B (₹)
Cost of vehicle	25,000	15,000
Road license fee per year	750	750
Supervision yearly Salary	1,800	1,200
Driver's wages per hour	4.00	4.00
Cost of fuel per litre	1.50	1.50
Repairs and maintenance per km	1.50	2.00
Tyre cost per km	1.00	0.80
Garage rent per year	1,600	550
Insurance yearly	850	500
Kilometers run per litre	6	5
Kilometers run during the year	15,000	6,000
Estimated life of vehicle (km)	1,00,000	75,000

Charge interest at 10% on the cost of vehicle. Each vehicle runs 20 km. per hour on an average.

(6 Marks)

6 (a) CARLHAMS LTD. runs a lodging home in a hill station. For this purpose, it has hired a building at a rent of ₹1,20,000 per month along with 5% of total takings. The lodging home has three types of suites for its customers, viz., single room, double rooms and triple rooms. Following information is given:

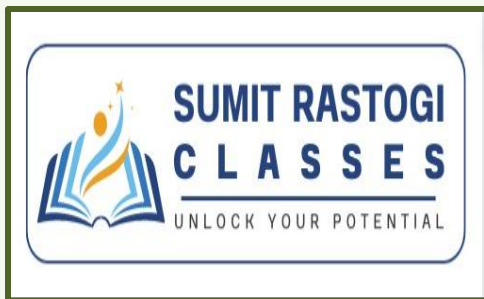
Type of Suite	Number	Occupancy %
Single Room	100	80%
Double Room	40	60%
Triple Rooms	20	50%

The rent of double rooms suite is to be fixed at 1.5 times of the single room suite and that of triple rooms suite as twice of the double rooms suite. The expenses for the year 2018 are as follows:

Particulars	Amount (₹)
Staff salaries	32,50,000
Room attendance wages	12,00,000
Lighting, heating and power	9,75,000
Repairs & renovation	4,80,000
Laundry charges	1,65,000
Interior decoration	1,80,000
Sundry expenses	1,94,000

Provide profit @20% on total takings and assume 360 days in a year. You are required to work out the room rent chargeable per day for each type of suite.

(7 Marks)



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6 (b) A transport company has a fleet of three trucks of 10 tonnes capacity each plying in different directions for transport of customer's goods. The trucks run loaded with goods and return empty. The distance travelled, number of trips made and the load carried per day by each truck are as under:

Truck No.	One way Distance Km	No. of trips per day	Load carried per trip / day tonnes
1	16	4	6
2	40	2	9
3	30	3	8

The analysis of maintenance cost and the total distance travelled during the last two years is as under:

Year	Total distance travelled	Maintenance Cost ₹
1	1,60,200	46,050
2	1,56,700	45,175

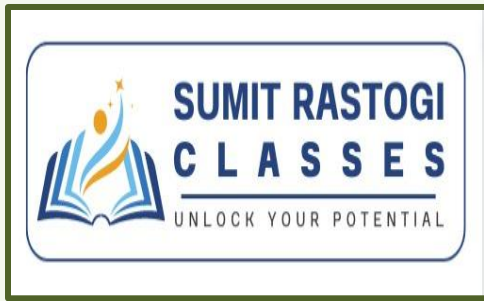
The following are the details of expenses for the year under review:

Diesel : ₹ 10 per liter. Each liter gives 4 km per liter of diesel on an average.
 Driver's salary : ₹ 2,000 per month per truck
 Licence and taxes : ₹ 5,000 per annum per truck
 Insurance : ₹ 5,000 per annum for all the three vehicles
 Purchase Price per truck : ₹ 3,00,000, Life 10 years & Scrap value is ₹ 10,000.
 Oil and sundries : ₹ 25 per 100 km run.
 General Overhead : ₹ 11,084 per annum for all the three vehicles
 The vehicles operate 24 days per month on an average.

Required

- Prepare an Annual Cost Statement covering the fleet of three vehicles.
- Calculate the cost per km. run.
- Determine the freight rate per tonne km. to yield a profit of 10% on freight

(7 Marks)



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7 (a) OMEGA LTD. undertook a contract for ₹5,00,000 on 1st January, 2017. The company furnishes the following details for the year ended 31st December, 2017

Materials consumed	1,65,000
Direct Expenses	5,000
Wages	30,000
Materials returned to stores	5,000
Materials stolen from site	10,000
Insurance claim admitted	6,000
Works expenses	20% on wages
Office expenses	10% on works cost
Materials in hand on 31-12-2017	15,000
Cash received to the extent of 90% of works certified	2,70,000
Cost of work uncertified	11,000

Plant sent to site costing ₹60,000 with a scrap value of ₹10,000 and its useful life is 5 years. The plant was used on the contract for 146 days.

REQUIRED: Prepare Contract Account showing therein the cost of materials issued to site and the amount of profit or loss to be transferred to the Profit & Loss. (7 Marks)

7 (b) Shri Rajesh Agarwal has started transport business with a fleet of 10 taxies. The various expenses incurred by him are given below:

(a) Cost of each taxi	₹3,00,000.
(b) Salary of Office Staff	₹5,000 p.m.
(c) Salary of Garage's Supervisor	₹10,000 p.m.
(d) Rent of Garage	₹5,000 p.m.
(e) Drivers Salary (per taxi)	₹10,000 p.m.
(f) Road Tax and Repairs per taxi	₹6,000 p.a.
(g) Insurance premium	6% of cost p.a.

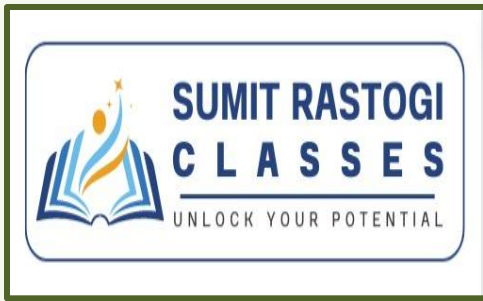
The life of a taxi is 3,00,000 Km. and at the end of which it is estimated to be sold at ₹25,000. A taxi runs on an average 6000 Km. per month of which 10% it runs empty, petrol consumption 11 Km. per litre of petrol costing 72 per litre. Oil and other sundry expenses amount to ₹50 per 100 Km.

1. Calculate the effective cost of running a taxi per kilometer.
2. If the hire charge is ₹13 per kilometer on average, find out the profit that Shri Agarwal may expect to make in the first year of operation. (7 Marks)

8 (a) Differentiate between Operation Cost and Operating Cost. (4 Marks)

8 (b) Write short note on Retention money in contract costing. (5 Marks)

8 (c) Write Short Note on Cost Plus Contract. (5 Marks)



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ANSWERS OF TEST PAPER - 04

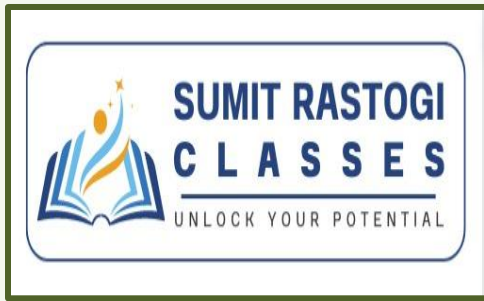
(CHAPTERS COVERED – OPERATING COSTING & CONTRACT COSTING)

COST ACCOUNTING

SECTION-A

ANS. 1

- | | | |
|---------------|------------|---|
| (i) | (a) | Composite unit of transport sector |
| (ii) | (c) | Escalation Clause |
| (iii) | (b) | 18,57,024 passengers kms. |
| (iv) | (b) | 18900 Room days |
| (v) | (c) | 5000 |
| (vi) | (d) | All of the above |
| (vii) | (a) | ₹7,00,000 |
| (viii) | (d) | None of the above |
| (ix) | (c) | ₹1.50 |
| (x) | (b) | Job cost sheet |
| (xi) | (d) | Per patient day |
| (xii) | (c) | ₹120 |
| (xiii) | (d) | ₹3 |
| (xiv) | (a) | ₹25,08,800 |
| (xv) | (c) | At cost under WIP A/c |



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SECTION-B

ANS. 2 (a)

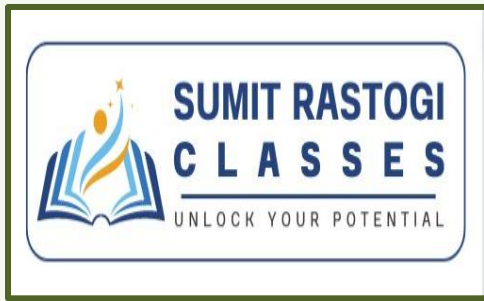
Computation of Cost per passenger Kilometer

Particulars	Amount (₹)	Amount (₹)
Standing Charges:		
Salaries of office and supervisory staff	25,000	
Wages of drivers, conductors and cleaners	80,000	
Taxes, insurance etc.	20,000	
Depreciation	35,000	
Interest and other charges	20,000	1,80,000
Running and Maintenance Charges:		
Diesel, oil and other lubricants	60,000	
Repairs and maintenance	12,000	72,000
Total Cost		2,52,000
Cost per Passenger Km.		2,52,000/11,90,400 = 0.21

Working Note: Calculation of Passenger Kilometers:

Number of buses × distance in one round Trip × No. of round trips × seating capacity available × percentage of seating capacity actually used × number of days in a month.

5 buses × 60Km. × 2 × 2 × 40 passenger × 80% × 31 days = 11,90,400 Passengers Km.



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ANS. 2

Contract Account
for the year ended March 31, 2023

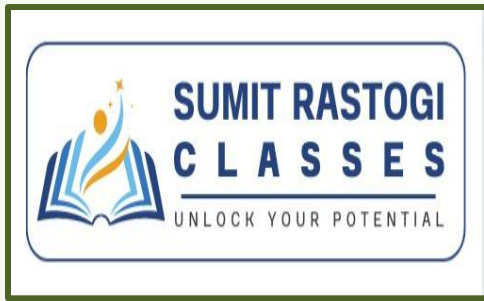
Particulars	₹	Particulars	₹
To Material and Stores	1,20,000	By Material at site	5,000
To Labour Charges	1,50,000	By Work-in-progress:	
To Depreciation (30,000 – 20,000)	10,000	Work Certified	4,00,000
To Salary and other Expenses	90,000	Work Uncertified	15,000
To Machine Hire Charges (500 × 4)	2,000	By Profit & Loss A/c	6,000
To O/s Salary of Supervisor (4,000 × 2 × 1/2)	4,000	(Material Damaged)	
To Notional Profit c/d	50,000		
	4,26,000		4,26,000
To Profit & Loss A/c	15,000	By Notional Profit b/d	50,000
To WIP A/c (Reserve) B/F	35,000		
	3,324		3,324

$$\text{DOC} = (4,00,000/10,00,000) \times 100 = 40\%$$

∴ Profit to be taken to Profit & loss Account

$$= 1/3^{\text{rd}} \times \text{Notional Profit} \times \text{Cash Received/Work Certified}$$

$$= 1/3 \times 50,000 \times 90\% = ₹15,000$$



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ANS. 3 (a)

Calculation of Absolute ton-kms

Journey	Ton-km up	Ton-km Down
Delhi to Kochi	$2,700 \times 15 = 40,500$	$2,700 \times 7 = 18,900$
Delhi to Guwahati	$1,890 \times 13 = 24,570$	$1,890 \times 0 = 0$
Delhi to Vijayawada	$1,840 \times 16 = 29,440$	$1,840 \times 0 = 0$
Delhi to Varanasi	$815 \times 11 = 8,965$	$815 \times 0 = 0$
Delhi to Asansol	$1,280 \times 13 = 16,640$	$1,280 \times 5 = 6,400$
Delhi to Chennai	$2,185 \times 11 = 24,035$	$2,185 \times 9 = 19,665$
Total	1,44,150	44,965

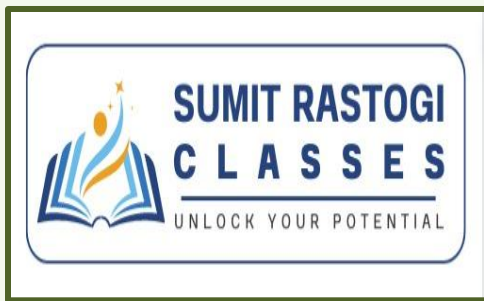
(i) Total Absolute ton-kms = $1,44,150 + 44,965 = 1,89,115$

Calculation of Total Cost per month for all trucks

Particulars	Amount (₹)
Diesel cost ($21,420 \times 30$)	6,42,600
Engine Oil ($21,420 \times 8,400/28,000$)	6,426
Repairs and maintenance ($21,420 \times 24,000/20,000$)	25,704
Driver's Salary ($40,000 \times 5$)	2,00,000
Cleaner's Salary ($14,000 \times 5$)	70,000
Supervision and other general expenses	30,000
Cost of loading of goods $[(79+21) \times 400]$	40,000
Depreciation $[(30,00,000/7,20,000) \times (21,420)]$	89,250
Total Cost	11,03,980

Total Kms = $10,710 \times 2 = 21,420$

(ii) Cost per ton-km = $11,03,980/1,89,115 = ₹5.84$



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ANS. 3 (b) Working Notes: Calculation of number of patient days

Particulars	Details
35 Beds × 150 days	5,250
25 Beds × 80 days	2,000
Extra beds	750
Total	8,000

Profitability Statement

Particulars	Amount (₹)	Amount (₹)
Income for the year (₹2,000 per patient per day × 8,000 patient days)		1,60,00,000
Less: Variable Costs:		
Doctor Fees (₹2,50,000 per month × 12months)	30,00,000	
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	
Bed Hire Charges (₹100 × 750 beds)	75,000	56,05,000
Contribution		1,03,95,000
Less: Fixed Costs:		
Rent (₹75,000 per month × 12 months)	9,00,000	
Supervisor (2 persons × ₹25,000 × 12months)	6,00,000	
Nurses (4 persons × ₹20,000 × 12months)	9,60,000	
Ward Boys (4 persons × ₹5,000 × 12months)	2,40,000	
Repairs (fixed)	81,000	
Other fixed expenses	10,80,000	
Administration expenses allocated	10,00,000	48,61,000
Profit		55,34,000

Calculation of Contribution per Patient Day

Total Contribution = ₹1,03,95,000

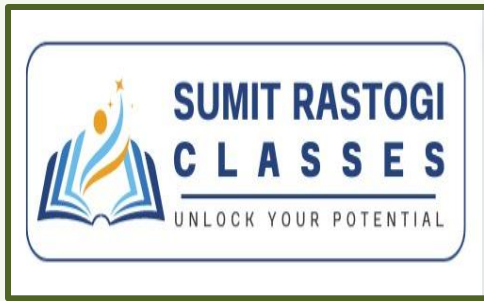
Total Patient days = 8,000

Contribution per Patient Day = ₹1,03,95,000 / 8,000 = ₹1,299.375

Break-even Point = Fixed Cost / Contribution per Patient Day

= ₹48,61,000 / ₹1,299.375

= 3,741 patient days



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ANS. 4 (a) Computation of Room Days:

Single rooms = $200 \times 365 \times 80\% = 58,400$

Double rooms = $50 \times 365 \times 80\% = 14,600$

Computation of Total Costs:

Single rooms = $(440 + 240) \times 58,400 = ₹3,97,12,000$

Double rooms = $(700 + 500) \times 14,600 = ₹1,75,20,000$

Total Cost = ₹5,72,32,000

Let Rent of single room = X

Rent of Double room = 1.50X (150% of single room)

Total Room rent = $58,400X + 1.50X \times 14,600 = 80,300X$

Profit = 20% of room rent = $20\% \times 80,300X = 16,060X + 16,060X$

Total room rent = $5,72,32,000 + 16,060X$

$80,300X = 5,72,32,000 + 16,060X$

$64,240X = 5,72,32,000$

X = ₹890.91

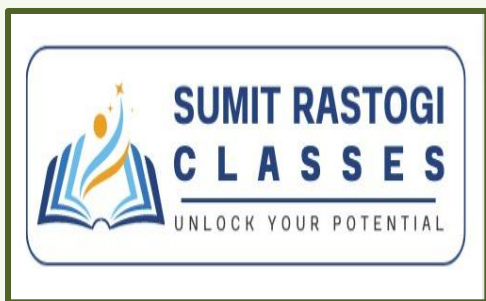
Rent of single room per day = **₹890.91**

Rent of Double room per day = $₹890.91 \times 1.5 = ₹1,336.37$

ANS. 4 (b)

Contract Account for the year ended March 31, 2019

Particulars	₹	Particulars	₹
To Material	10,00,000	By Material in hand	2,50,000
To General Expenses	1,00,000	By Work-in-progress	
To Wages Paid and accrued	5,00,000	Work Certified (including escalation)	20,50,000
To Depreciation on Plant	50,000	Work Uncertified	1,50,000
To Notional Profit c/d	8,00,000		
	24,50,000		24,50,000
To Profit & Loss A/c	2,00,000	By Notional Profit b/d	8,00,000
To WIP A/c (Reserve)	6,00,000		
	8,00,000		8,00,000



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Working Notes:

(i) Calculation of Escalation Amount:

Cost of Materials and Wages incurred = ₹10,00,000 + 4,50,000 + 50,000 - 2,50,000 = ₹12,50,000

Cost of Materials and Wages before increase in prices = (₹12,50,000 × 100) / 125 = ₹10,00,000.

Therefore, increase in Contract Price = 25% × [₹12,50,000 - [(10,00,000 × 105) / 100]] = ₹50,000

(ii) % Work Certified = 20,00,000 × 100 / 50,00,000 = 40%

% work certified is less than 50%, hence Profit to be credited to P&L A/c

= **Notional Profit × 1/3 × Cash Received/Work Certified**

= 8,00,000 × 1/3 × 15,00,000 / 20,00,000 = ₹2,00,000

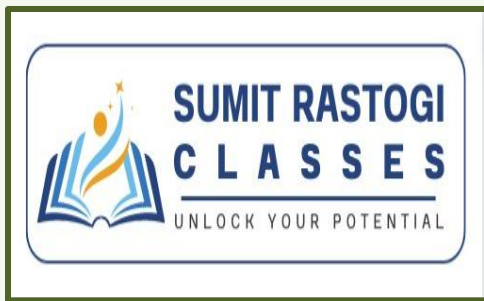
ANS. 5 (a)

(i) Statement showing the expenses of operating a single bus and the fleet of 25 buses for a year

Particulars	One Bus PA (₹)	Fleet of 25 buses PA (₹)
Diesel (Refer to working note 1)	56,832	14,20,800
Repairs & maintenance costs	16,400	4,10,000
Driver's salary	60,000	15,00,000
Cleaner's salary	7,200	1,80,000
Licence fee, taxes etc.	2,300	57,500
Insurance	15,600	3,90,000
Depreciation	93,750	23,43,750
Total expenses	2,52,082	63,02,050

(ii) Average cost per student per month in respect of students coming from a distance of

a) 4 kms. from the school (₹ 2,52,082 / 354 students × 12 months)	₹ 59.34
b) 8 kms from the school (₹ 59.34 × 2)	₹ 118.68
c) 16 kms from the school (₹ 59.34 × 4)	₹ 237.36



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ANS. 5 (b)

Operating Cost Statement

	Vehicle A ₹	Vehicle B ₹
Operating and maintenance cost per km	3.20	3.50
Fixed charges per km	0.50	0.75
Operating cost per km	3.70	4.25

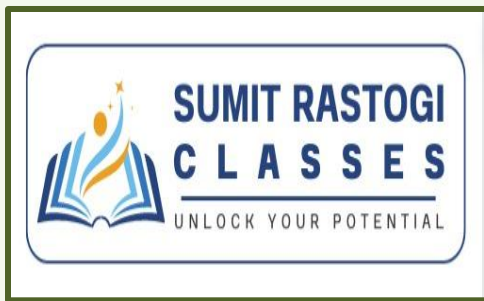
Working Notes:

Calculation of Operating and maintenance cost per km.

Driver's wages 4/20	0.20	0.20
Cost of fuel 1.50/6 & 1.50/5	0.25	0.30
Repairs and maintenance per km	1.50	2.00
Tyre cost per km	1.00	0.80
Depreciation	0.25	0.20
Operating and maintenance cost per km	3.20	3.50

Calculation of fixed charges per km

Road license	750	750
Supervisor's salary	1,800	1,200
Garage rent	1,600	550
Insurance	850	500
Interest	2,500	1,500
Total Fixed charges	7,500	4,500
Km. run during the year	15,000	6,000
Fixed charges pr km.	0.50	0.75



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ANS. 6 (a)

Calculation of room days equivalent to Single room suite

Room Category	Room Days
Single Rooms = $100 \times 360 \times 80\%$	28,800
Double Rooms = $40 \times 360 \times 60\%$	$8,640 \times 1.5 = 12,960$
Triple Rooms = $20 \times 360 \times 50\%$	$3,600 \times 3 = 10,800$
Total Rooms Days Equivalent to Single Room Suite	52,560

Statement of Total Cost & Takings

Particulars	Amount ₹
Staff salaries	32,50,000
Room attendants wages	12,00,000
Lighting, heating and power	9,75,000
Repairs & renovation	4,80,000
Laundry charges	1,65,000
Interior decoration	1,80,000
Sundry expenses	1,94,000
	64,44,000
Building Rent = $1,20,000 \times 12 + 5\%$ of Takings	$14,40,000 + 5\%$ of Takings
Total Cost	$78,84,000 + 5\%$ of Takings
+ Profit	20% of Takings
Total Takings	$78,84,000 + 25\%$ of Takings

Let X be the rent of single room suite, so total takings = 52,560X.

$$52,560X = 78,84,000 + 25\% \times 52,560X$$

$$52,560X = 78,84,000 + 25\% \times 13,140X$$

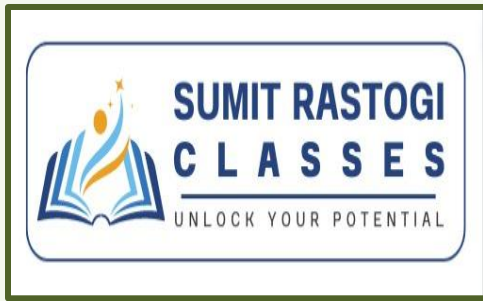
$$39,420X = 78,84,000$$

$$X = ₹200$$

$$\text{Rent for single room suite} = ₹200$$

$$\text{Rent for double room suite} = 1.5 \times 200 = ₹300$$

$$\text{Rent for triple room suite} = 3 \times 200 = ₹600$$



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ANS. 6 (b)

(i)	Annual Cost Statement of three vehicles	₹
	Diesel (1,34,784 kms / 4 km) × ₹ 10)	3,36,960
	Oil & sundries (1,34,784 kms/100 kms) × ₹ 25	33,696
	Maintenance {(1,34,784 kms × 0.25P) + ₹ 6,000}	39,696
	Drivers' salary (₹ 2,000 × 12 months) × 3 trucks	72,000
	Licence and taxes	15,000
	Insurance	5,000
	Depreciation (₹ 2,90,000/10 years) × 3 trucks	87,000
	General overhead	11,084
	Total annual cost	6,00,436

(ii) Cost per km. run

$$\text{Cost per kilometer run} = \frac{\text{Total annual cost of vehicles}}{\text{Total kilometre travelled annually}} = \frac{\text{Rs.6,00,436}}{1,34,784 \text{ Kms}} = \text{Rs.4.4548}$$

(iii) Freight rate per tonne km (to yield a profit of 10% on freight)

$$\text{Cost per tonne km.} = \frac{\text{Total annual cost of three vehicles}}{\text{Total effective tonnes kms. per annum}} = \frac{\text{Rs.6,00,436}}{5,25,312 \text{ kms}} = \text{Rs.1.143}$$

$$\text{Freight rate per tonne km.} = ₹ 1.27 \left(\frac{\text{Rs.1.143}}{9} \right) \times 10$$

Working notes:

1. Total kilometer travelled and tonnes kilometer (load carried) by three trucks in one year

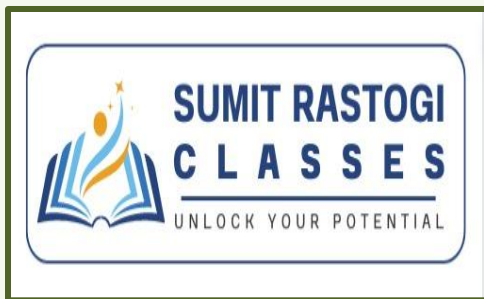
Truck number	One way distance in kms	No. of trips	Total distance covered in km per day	Load carried per trip / day in tonnes	Total effective tonnes km
1	16	4	128	6	384
2	40	2	160	9	720
3	30	3	180	8	720
Total			468		1824

- Total kilometers travelled by three trucks in one year = 1,34,784 (468 kms × 24 days × 12 months)
- Total effective tonnes kilometers of load carried by three trucks during one year = 5,25,312

2. Fixed and variable component of maintenance cost:

$$\text{Variable Maintenance Cost Per Km} = \frac{\text{Difference in maintenance cost}}{\text{Difference in distance travelled}} = \frac{\text{Rs.46,050} - \text{Rs.45,175}}{1,60,200 \text{ kms} - 1,56,700 \text{ kms}} = ₹ 0.25$$

$$\begin{aligned} \text{Fixed Maintenance Cost} &= \text{Total Maintenance Cost} - \text{Variable Maintenance Cost} \\ &= ₹ 46,050 - 1,60,200 \text{ kms} \times 0.25 = ₹ 6,000 \end{aligned}$$



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ANS. 7 (a)

Contract Account for the year ended December 31, 2017

Particulars	₹	Particulars	₹
To Material Issued to Site	1,95,000	By Material Returned to Stores	5,000
To Direct Expenses	5,000	By Insurance Claim A/C	6,000
To Wages	30,000	By Profit & Loss A/C	4,000
To Depreciation	4,000	(Loss = 10,000 – 6,000)	
To Work Expenses (20% of Wages)	6,000	By Material in Hand	15,000
To Office Expenses (10% of Works Cost)	21,000	By Work-in-Progress	
		Work Certified	3,00,000
To Notional Profit c/d	80,000	Work Uncertified	11,000
	3,41,000		3,41,000
To Profit & Loss A/c	48,000	By Notional Profit b/d	80,000
To WIP A/c (Reserve)	32,000		
	80,000		80,000

Working Notes:

1. Calculation of Cost of Materials Issued to Site:

Materials consumed	1,65,000
Add: Material Stolen	10,000
Materials returned to stores	5,000
Materials in hand (31-12-2017)	15,000
	1,95,000

2. Calculation of Works Cost:

Materials consumed	1,65,000
Add: Direct Wages	30,000
Direct Expenses	5,000
Prime cost	2,00,000
Add: Works expenses Depreciation	6,000
	4,000
	2,10,000

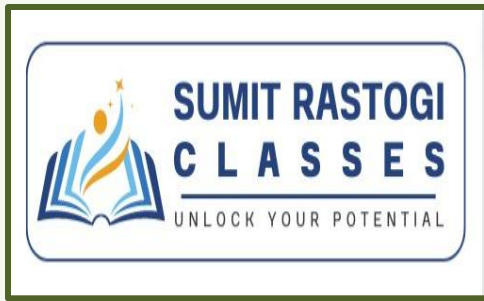
3. Calculation of Depreciation on Plant = $(60,000 - 10,000)/5 \times 146/365 = ₹4,000$

4. % Work Certified = $3,00,000 \times 100/5,00,000 = 60\%$

5. Since more than 50% work is certified, Profit Transferred to Profit & Loss Account

$$= \frac{2}{3} \times \text{Notional Profit} \times \text{Cash received/Work certified}$$

$$= 80,000 \times \frac{2}{3} \times \frac{2,70,000}{3,00,000} = ₹48,000$$



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ANS. 7 (b)

Computation of Cost per Kilometer (Cost is calculated based on 10 taxis for a month)

Particulars	Amount (₹)	Per km (₹)
Standing Charges:		
Salary of Office Staff	5,000	
Salary of Garage's Supervisor	10,000	
Rent of Garage	5,000	
Driver's Salary (10,000 × 10)	1,00,000	
Road Tax and Repairs (6,000 × 10/12)	5,000	
Insurance Premium (3,00,000 × 6% × 10/12)	15,000	
Fixed Cost Per km	1,40,000/60,000	2.33
Running and Maintenance Charges (Per Km.):		
Depreciation [(3,00,000 – 25,000)/3,00,000]	0.92	
Petrol	6.55	
Oil & sundry expenses	0.50	7.97
Total Cost per km		10.30
Effective Cost Per km	10.30 × 100/90	11.44

Profit for the year

= (Hire Charges Per Km – Effective Cost Per Km) × Effective Kms Per Month × No. Of Months

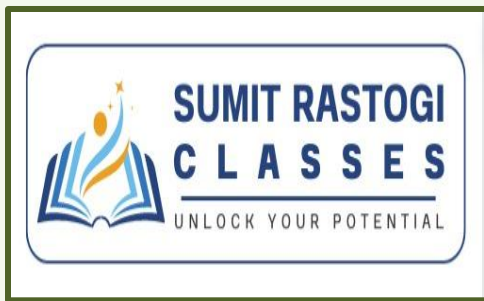
= (13 – 11.44) × 54,000 × 12 = ₹10,10,880

Working Notes:

Total Kms per month = 6,000 × 10 = 60,000 kms

Total Effective Kms per month = 6,000 × 90% × 10 = 54,000 kms

(10% Kms are run with empty taxi)



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ANS. 8 (a) DIFFERENCE BETWEEN OPERATION COST AND OPERATING COST

OPERATION COST	OPERATING COST
(1) Operation cost is the cost of a specific operation involved in a production process or business activity. (2) The cost unit in this method is the operation, instead of process. (3) When the manufacturing method of a concern consists of a number of distinct operations, operating costing is suitable.	(1) Operating cost is the cost incurred in conducting a business activity. (2) The cost units used are Kilo Watt Hour (KWH), Passenger Kilometers and Bed in the Hospital etc. (3) It is suitable in concerns which do not manufacture any product but which provide services.

ANS. 8 (b) SHORT NOTE ON RETENTION MONEY IN CONTRACT COSTING

- Usually, the contractee stipulates in the contract deed that he would withhold a part of the contract price to be paid at a later stage after completion of the contract.
- This is to make sure that the contractor has performed all work relating to contract on the most satisfactory manner and that no repair work arises within a prescribed time limit.
- The amount so withheld by the contractee is known as retention money.
- It safeguards the interest of the contractee against the contractor, who may at time perform sub-standard work and gain there from.
- This is done on the value of contract completed and certified by the architect/ surveyor appointed by the contractee.
- The retention money will be paid once the contract is completed to the customer's satisfaction.
- The main advantage of Retention Money is safe-guarding the contractee against the default risk of contract.

ANS. 8 (c) SHORT NOTE ON COST PLUS CONTRACT

- In this type of contracts, the contractor is usually entitled to a stipulated amount of profit in addition to actual cost of the service.
- The amount of profit to be added to the actual cost of contract may be in the form of fixed amount on a percentage on actual cost.
- This type of contract is generally entered into for executing special type of work which is not usually undertaken by the contractor.
- Examples of this type of contracts are construction work during war, production of newly designed ship, etc. This type of contract is advantageous both to the contractor and the contractee.
- Contractor generally receives a reasonable profit. He is protected from any loss or unusual risk.
- Contractee can ensure a fair price of the contract because the contractee is entitled to verify the books of contractor.