

CLASS

XII



# FOOD & BEVERAGE

## COST & CONTROL

### (PRACTICAL MANUAL)



**CENTRAL BOARD OF SECONDARY EDUCATION**

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110 092 India

# नया आगाज़

आज समय की माँग पर  
आगाज़ नया इक होगा  
निरंतर योग्यता के निर्णय से  
परिणाम आकलन होगा।

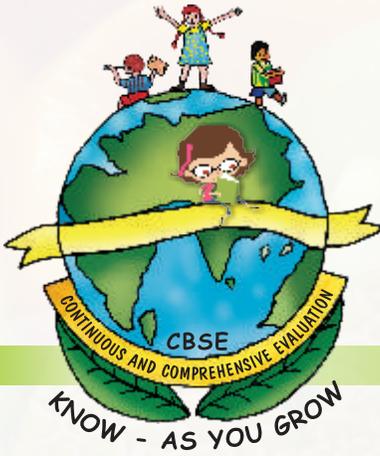
परिवर्तन नियम जीवन का  
नियम अब नया बनेगा  
अब परिणामों के भय से  
नहीं बालक कोई डरेगा

निरंतर योग्यता के निर्णय से  
परिणाम आकलन होगा।

बदले शिक्षा का स्वरूप  
नई खिले आशा की धूप  
अब किसी कोमल-से मन पर  
कोई बोझ न होगा

निरंतर योग्यता के निर्णय से  
परिणाम आकलन होगा।

नई राह पर चलकर मंज़िल को हमें पाना है  
इस नए प्रयास को हमने सफल बनाना है  
बेहतर शिक्षा से बदले देश, ऐसे इसे अपनाए  
शिक्षक, शिक्षा और शिक्षित  
बस आगे बढ़ते जाएँ  
बस आगे बढ़ते जाएँ  
बस आगे बढ़ते जाएँ.....





# **FOOD & BEVERAGE Cost & Control**

*Practical Manual*

**CLASS XII**



**CENTRAL BOARD OF SECONDARY EDUCATION**

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110 092 India



Food Cost Control (Practical Manual) Class XII

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# Preface

The Central Board of Secondary Education has initiated a policy of introducing competency based Vocational Courses in various sectors of the economy in collaboration with leading industries of the similar filed. The objective of such courses it to develop employable skills among the students for self as well as job employment. The Board

has initiated the process to revamp the vocational education in the country by making it more acceptable and useful for the students. Under such program, the Central Board of Secondary Educational in collaboration with National Council for Hotel Management and Catering Technology (NCHMCT), has introduced two Vocational Packages mainly

1. Food Production
2. Food & Beverage Services at Senior Secondary Level.

The Curriculum of **Food Beverage Cost & Control** introduced by CBSE from the academic session 2010-2011 in class XII, gives an insight into the basic concept of Food Cost and its Control in hospitality sector. The present Practical Manual on "**Food Beverage Cost & Control**" is about understanding concepts of Food Cost Control, Cost and Costing and Beverage Control system through numerous numericals based on it. The book also emphasis upon various operating activities like Purchasing Receiving Storing and issuing.

While keeping the language of the text book simple and easy, theoretical based numerical and illustrations along with its solutions are employed to make reader easily understandable of the theoretical concepts. Since illustrations form an indispensable part of visual impression through flow charts on cost control, formats to make the concepts easy to understand. Though the scope of present course is very wide, yet the author have tried their best to cover adequately the syllabus at senior secondary level. Any suggestion(s) to improve the textbook is welcomed from both students and the faculty.

The Board acknowledges the contribution made by the team of experienced authors in completing the manuscript. The text book on Food Beverage Cost and Control is an outcome of a series of meetings

organized by the Vocational cell. The process initiated under the direction of Sh. Shashi Bhusan, Former Director (Edusat and Vocational) was completed under the guidance of Dr. Rashmi Sethi (Education Officer) and her team. A special mention to the efforts of Research Fellow, Ms. Sunaina Srivastava who carefully proof read the manuscripts. The Board duly acknowledges the role of NCHMCT, Noida for Teachinal guidance to promote the hospitality education at school level in India. I am sure this book would serve the purpose of a useful resource material for students and the teachers.



Vineet Joshi, IAS  
Chairman, CBSE



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# भारत का संविधान

## उद्देशिका

हम, भारत के लोग, भारत को एक ' [ सम्पूर्ण प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य ] बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,  
विचार, अभिव्यक्ति, विश्वास, धर्म  
और उपासना की स्वतंत्रता,  
प्रतिष्ठा और अवसर की समता

प्राप्त कराने के लिए, तथा उन सब में, व्यक्ति की गरिमा और [ राष्ट्र की एकता और अखण्डता ] सुनिश्चित करने वाली बंधुता बढ़ाने के लिए दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई० को एतद्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

1. संविधान ( बयालीसवां संशोधन ) अधिनियम, 1976 की धारा 2 द्वारा ( 3.1.1977 ) से "प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य" के स्थान पर प्रतिस्थापित।
2. संविधान ( बयालीसवां संशोधन ) अधिनियम, 1976 की धारा 2 द्वारा ( 3.1.1977 से ), "राष्ट्र की एकता" के स्थान पर प्रतिस्थापित।

## भाग 4 क मूल कर्तव्य

51 क. मूल कर्तव्य - भारत के प्रत्येक नागरिक का यह कर्तव्य होगा कि वह -

- (क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;
- (ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;
- (ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;
- (घ) देश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;
- (ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;
- (च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका परीक्षण करे;
- (छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी, और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणिमात्र के प्रति दयाभाव रखे;
- (ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;
- (झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;
- (ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले।

# THE CONSTITUTION OF INDIA

## PREAMBLE

**WE, THE PEOPLE OF INDIA**, having solemnly resolved to constitute India into a **SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC** and to secure to all its citizens :

**JUSTICE**, social, economic and political;

**LIBERTY** of thought, expression, belief, faith and worship;

**EQUALITY** of status and of opportunity; and to promote among them all

**FRATERNITY** assuring the dignity of the individual and the <sup>2</sup> [unity and integrity of the Nation];

**IN OUR CONSTITUENT ASSEMBLY** this twenty-sixth day of November, 1949, do **HEREBY TO OURSELVES THIS CONSTITUTION.**

1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic (w.e.f. 3.1.1977)
2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation (w.e.f. 3.1.1977)

# THE CONSTITUTION OF INDIA

## Chapter IV A

### Fundamental Duties

#### ARTICLE 51A

#### **Fundamental Duties - It shall be the duty of every citizen of India-**

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) To promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement.



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**Numerical on:**

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**Assignment :** Prepare a 'Beverage Control System Flow Chart with each step explained in detail





# 1 Chapter

## FOOD Cost Control

**Learning Objectives :** At the end of this unit learners would be able to :

- (a) Understand concepts of Food Cost in Hospitality Sector.
- (b) Know advantages of Food Cost Control.
- (c) Understand the concept & ability to calculate material cost, labour, cost & overheads cost.
- (d) Understand economic importance of Food Cost Control.

### Material Cost (Food Cost):

In material cost (food cost) one has to take into account the opening stock, fresh stores receipts, closing stock and the food consumed by staff or served as complementary to guests usually spoilage of food is charged to the material cost. From the following example, it will be clear, that how material cost is calculated.

### Illustration 1

Ascertain the Total Material (Food) Cost and its percentage to Net Sales from the following information:

Total Sale	₹ 57,500
Opening Stock	₹ 1,000
Fresh Indents / Purchases	₹ 12,000
Closing Stock	₹ 500
Food Consumed by Staff	₹ 600
Food Served to Guests (as Complementary)	₹ 400



**Solution:**

Total Material / Food Cost:	₹
Opening Stock	1,000
Add Fresh Indents / Purchases	<u>12,000</u>
	13,000
Less Closing Stock	<u>500</u>
	12,500
Less Food Served to Staff and Guests (Free of Cost) *	<u>1,000</u>
Total Material / Food Cost	<u>11,500</u>

To Ascertain the Material Cost Percentage to Net Sales the formula is:

$$= \frac{\text{Total Material Cost} \times 100}{\text{Total Sale}} = \frac{11,500 \times 100}{57,500} = 20\%$$

The Material Cost Percentage to Net Sale is 20%

**Working Notes:**

* Food Consumed by staff	₹ 600
Food served to guests (as complementary)	₹ 400
Total	₹ 1,000

**LABOUR COST :**

To ascertain the labour cost one must include, apart from wages and salaries, all other expenditure incurred on staff or on its welfare like Medical Re-imbursement, Leave Travel Concession (L.T.C.), Contribution towards Employee's Provident Fund (E.P.F.), Free Food, Uniform, Accommodation, Interest Subsidy on Loan, Telephone, etc.

**Illustration 2**

Ascertain the Total Labour Cost and its percentage to Net Sale from the following information:



	₹
Total Sale	1,14,000
Wages and Salary	7,000
Contribution towards E.P.F.	700
Medical Re-imburement	500
L.T.C.	1,200
Uniform and Washing Allowance	500
Accommodation worth Rs. 600, charged at	200
Interest Subsidy	200
Free Telephone at Home	500
Food h Rs. 400, Charged to Employees	200

**Solution:**

	₹
Total Labour Cost:	₹
Wages and Salaries	7,000
E.P.F.	700
Medical Re-imburement	500
L.T.C.	1,200
Uniform and Washing Allowance	500
Rent for Accommodation	₹ 600
Less Charged from Employees	₹ 200
Interest Subsidy	200
Free Telephone at Home	500
Food for Employees	₹ 400
Food Money Charged	₹ 200
Total Labour Cost	11,200

To ascertain the Labour Cost Percentage to Net Sale, the formula is:

$$= \frac{\text{Total Labour Cost} \times 100}{\text{Total Sale}}$$

$$= \frac{11,200 \times 100}{1,14,000} = 9.82\%$$

The Labour Cost Percentage to Net Sale is 9.82%



### OVER HEADS:

All other costs like office expenses, rent, interest, light and power, commission, water, gas and fuel, cooking coke and wood, advertisement and marketing expenses, miscellaneous expenses, etc. are included under this head.

### Illustration 3

Ascertain the Over heads and its percentage to Net Sales from the following data:

	₹
Total Sale	27,900
Rent	4,000
Interest	1,000
Commission	500
Depreciation	1,000
Advertisement	700
Gas and Fuel	200
Electricity and Power	500
Water	100
Miscellaneous Expenses	1,000
Laundry	300

### Solution:

Total Over heads:	₹
Rent	4,000
Interest	1,000
Commission	500
Depreciation	1,000
Advertisement	700
Gas and Fuel	200



Electricity and Power	500
Water	100
Miscellaneous Expenses	1,000
Laundry	300
Total Over heads	9,300

**Note:** The laundry charges can be apportioned into two (i) Over heads, (ii) Labour Cost. This allocation will be done if the staff's uniform is washed by hotel free of cost.

To ascertain the Over heads percentage to Net Sale the formula is:

$$= \frac{\text{Total Over heads} \times 100}{\text{Total Sale}}$$

$$= \frac{9,300 \times 100}{27,900} = 33.33$$

The Over heads Percentage to Net Sale is 33.33%

#### Illustration 4

From the following information ascertain the Food Cost, Labour Cost and Over heads and also find out Percentage to Total Sale of each cost. Also find out Gross Profit / Loss and Net Profit / Loss and its percentage to Total Sale.

		₹
Sale	Food	20,000
	Beverage	15,000
Opening Stock	Food	700
	Beverage	800



Purchases	Food	8,500
	Beverage	6,800
Closing Stock	Food	300
	Beverage	400
Restaurant Rent		14,000
Fuel Expenses		800
Office Expenses		2,000
Miscellaneous Expenses		1,200
Traveling Allowance		500
Contribution towards E.P.F.		1,500
Wages and Salary		10,000
Furniture Purchased		4,000
Depreciation		300
Telephone		200
Repair		200

The total food debited to staff canteen from main kitchen was ₹ 1,200 but ₹ 200 was charged from staff towards meal. Hotel paid ₹ 1,000 as rent for staff accommodation but staff was charged ₹ 300 only. The hotel served free food to some guests worth ₹ 1,100.

#### Solution:

Total Food Cost:			₹
Opening Stock	Food	₹	700
	Beverage	₹	800
Add Purchases	Food	₹	8,500
	Beverage	₹	6,800
			16,800
Less Closing Stock	Food	₹	300
	Beverage	₹	400
			700
			<u>16,100</u>



Less Staff Meal * (1200 - 200)	1,000	
		15,100

Less Free Food served to Guests	1,100	
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<b>Total Food Cost</b>		<b>14,000</b>
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<b>Total Labour Cost:</b>		<b>₹</b>
---------------------------	--	----------

Staff Meal		1,000
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Wages and Salary		10,000
------------------	--	--------

Traveling Allowance		500
---------------------	--	-----

Contribution towards E.P.F.		1,500
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Medical Re-imbursement		500
------------------------	--	-----

Rent **		700
---------	--	-----

<b>Total Labour Cost</b>		<b>14,200</b>
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<b>Total Over heads:</b>		<b>₹</b>
--------------------------	--	----------

Restaurant Rent		14,000
-----------------	--	--------

Fuel Expenses		800
---------------	--	-----

Office Expenses		2,000
-----------------	--	-------

Miscellaneous Expenses		1,200
------------------------	--	-------

Electricity and Power		400
-----------------------	--	-----

Free Food Served to Guests		1,100
----------------------------	--	-------

Water Charges		300
---------------	--	-----

Depreciation		300
--------------	--	-----

Telephone		200
-----------	--	-----

Repair		200
--------	--	-----

<b>Total Over heads</b>		<b>20,500</b>
-------------------------	--	---------------



<b>Total Sale:</b>		₹
Food	₹ 20,000	
Beverage	₹ 15,000	35,000

**Food and Beverage Cost Percentage:**

$$= \frac{\text{Total Food and Beverage Cost} \times 100}{\text{Total Sale}}$$

$$= \frac{14,000 \times 100}{35,000} = 40\%$$

**Labour Cost Percentage:**

$$= \frac{\text{Total Labour Cost} \times 100}{\text{Total Sale}}$$

$$= \frac{14,200 \times 100}{35,000} = 40.57\%$$

**Over heads Percentage:**

$$= \frac{\text{Total Over heads} \times 100}{\text{Total Sale}}$$

$$= \frac{20,500 \times 100}{35,000} = 58.57\%$$

Net Loss = Total Cost - Total Sale

Net Profit = Total Sale - Total Cost

Total Cost = Total Food Cost + Total Labour Cost + Total Over heads

$$= 14,000 + 14,200 + 20,500 = ₹ 48,700$$



$$\text{Net Loss} = 48,700 - 35,000 = ₹ 13,700$$

$$\text{Gross Profit} = \text{Total Sale} - \text{Total Food Cost (Variable Cost)}$$

$$= 35,000 - 14,000 = ₹ 21,000$$

$$\text{Gross Profit Percentage} = \frac{\text{Gross Profit} \times 100}{\text{Total Sale}} = \frac{21,000 \times 100}{35,000} = 60\%$$

$$\text{Net Loss Percentage} = \frac{\text{Net Loss} \times 100}{\text{Total Sale}} = \frac{13,700 \times 100}{35,000} = 39.14\%$$

**Working Notes:**

	₹
Total Food Send to Staff Canteen	1,200
Less Money Charged from Staff for Meals	200
Net Amount Spend on Staff Meal *	1,000
Total Rent Paid by Hotel for Staff Accommodation	1,000
Less Rent Charged from Staff for Accommodation	300
Net Amount Paid by Hotel for Staff Accommodation **	1,000

**Note:** The amount of ₹ 4,000 spend on purchase of furniture is a capital expenditure, hence will not be shown in revenue expenses.

**Illustration 5**

From the following data available ascertain the Food Cost, Labour Cost and Over heads and also find out Gross Profit / Gross Loss and Net Profit / Net Loss and their percentage to Total Sale.

		₹
Sale	Food	2,00,000
	Beverage	1,60,000
	Others	24,000



Opening Stock	Food	10,000
	Beverage	2,000
Purchased	Food	60,000
	Beverage	40,000
Closing Stock	Food	8,000
	Beverage	4,000
Wages and Salary		40,000
Contribution towards E.P.F.		5,000
Medical Re-imburement		4,000
Laundry		2,000
Telephone Bills		1,000
Rent for Restaurant		12,000
Repair and Maintenance		2,000
Electricity and Power		1,500
Water Charges		500
Gas and Fuel		2,000
Miscellaneous Expenses		800
Office Expenses		5,000
Printing and Stationery		1,000
L.T.C. Paid to Staff		1,200
Depreciation		1,000

- (i) Out of Rs. 2,000 spend on Laundry; Rs. 500 was spend on Staff's Uniform Washing
- (ii) Staff was served a free food Rs. 2,000
- (iii) Staff was given accommodation for Rs. 500, where as hotel paid Rs. 2,000 for the same.
- (iv) Staff was given interest subsidy of Rs. 500
- (v) Complementary food served to guests for Rs. 2,000.



**Solution:**

<b>Total Food Cost:</b>		₹
Opening Stock	Food	₹ 10,000
	Beverage	₹ 2,000
		12,000
Add Purchases	Food	₹ 60,000
	Beverage	₹ 40,000
		1,00,000
		1,12,000
Less Closing Stock	Food	₹ 8,000
	Beverage	₹ 4,000
		12,000
		1,00,000
Less Staff Meal		2,000
		98,000
Less Free Food Served to Guests		2,000
<b>Total Food Cost</b>		<b>96,000</b>

<b>Total Labour Cost</b>	₹
Wages and Salary	40,000
Contribution towards E.P.F.	5,000
Medical Re-imburement	4,000
Laundry	500
L.T.C. paid to Staff	1,200
Staff Meal	2,000
Staff Accommodation (₹ 2,000 - ₹ 500)	1,500
Interest Subsidy	500
<b>Total Labour Cost</b>	<b>54,700</b>



**Total Over heads:**

	₹
Laundry (₹ 2,000 - ₹ 500)	1,500
Telephone Bills	1,000
Rent for Restaurant	12,000
Repair and Maintenance	2,000
Electricity and Power	1,500
Water Charges	500
Gas and Fuel	2,000
Miscellaneous Expenses	800
Office Expenses	5,000
Printing and Stationery	1,000
Depreciation	1,000
Complementary Food Served to Guests	2,000
<b>Total Over heads</b>	<b>30,000</b>

**Total Sale:**

		₹
Food	₹ 2,00,000	
Beverage	₹ 1,60,000	
Others	₹ 24,000	3,84,000

$$\text{Food Cost Percentage} = \frac{\text{Total Food Cost X 100}}{\text{Total Sale}}$$

$$= \frac{96,000 \times 100}{3,84,000} = 25\%$$

$$\text{Labour Cost Percentage} = \frac{\text{Total Labour Cost X 100}}{\text{Total Sale}}$$



$$= \frac{54,700 \times 100}{3,84,000} = 14.24\%$$

Over heads Percentage =  $\frac{\text{Total Over heads} \times 100}{\text{Total Sale}}$

$$= \frac{30,300 \times 100}{3,84,000} = 7.89\%$$

Net Loss = Total Cost - Total Sale

Net Profit = Total Sale - Total Cost

Total Cost = Total Food Cost + Total Labour Cost + Total Over heads

$$= 96,000 + 54,700 + 30,300 = ₹ 1,81,000$$

Net Profit = 3,84,000 - 1,81,000 = ₹. 2,03,000

Gross Profit = Total Sale - Total Food Cost

$$= 3,84,000 - 96,000 = ₹ 2,88,000$$

Gross Profit Percentage =  $\frac{\text{Gross Profit} \times 100}{\text{Total Sale}}$

$$= \frac{2,88,000 \times 100}{3,84,000} = 75\%$$

Net Profit Percentage =  $\frac{\text{Net Profit} \times 100}{\text{Total Sale}}$

$$= \frac{2,03,000 \times 100}{3,84,000} = 52.87\%$$



**Note:**

1. For the purpose of calculating Food Cost 'Food' means Food and Beverage.
2. To find out the Food Cost Percentage and Gross Profit Percentage instead of taking Total Sale only Food and Beverage Sale can also be taken.

**Illustration 6**

The following figures were extracted from the books of Mayur Hotel. Food Cost ₹ 800, Labour and Over head ₹ 1,000 and Sales ₹ 2,000. Find out Gross Profit, Net Profit, Gross Profit percentage to Sales and Net Profit percentage to Sales.

**Solution:**

$$\begin{aligned}\text{Gross Profit} &= \text{Sales} - \text{Food Cost} \\ &= 2,000 - 800 = ₹ 1,200\end{aligned}$$

$$\begin{aligned}\text{Net Profit} &= \text{Sales} - \text{Total Cost} \text{ (Total Cost = Food Cost + Labour Cost + Over head)} \\ &= 800 + 1,000 = ₹ 1,800 \\ &= 2,000 - 1,800 = ₹ 200\end{aligned}$$

$$\begin{aligned}\text{Gross Profit Percentage to Sales} &= \frac{\text{Gross Profit} \times 100}{\text{Sale}} \\ &= \frac{1,200 \times 100}{2000} = 60\%\end{aligned}$$

$$\begin{aligned}\text{Net Profit Percentage to Sales} &= \frac{\text{Net Profit} \times 100}{\text{Sale}} \\ &= \frac{200 \times 100}{2000} = 10\%\end{aligned}$$



### Illustration 7

Total Sale of an Institutes Canteen was ₹ 5,000 and Total Cost was ₹ 6,000. Find out the Net Loss and Net Loss Percentage to Receipts.

#### Solution:

$$\begin{aligned} \text{Net Loss} &= \text{Total Cost} - \text{Total Receipts (Sale)} \\ &= 6,000 - 5,000 = ₹ 1,000 \end{aligned}$$

$$\text{Net Loss Percentage to Receipts} = \frac{\text{Net Loss} \times 100}{\text{Receipts}}$$

$$= \frac{200 \times 100}{1,000} = 20\%$$

### Illustration 8

The following information was extracted from ABC Restaurant for the month of December, 2006.

	₹
Sales	50,000
Opening Stock	1,000
Purchases	22,000
Closing Stock	1,500
Wages and Salaries	8,500
E.S.I.	500
Gas and Electricity	2,000
Office Expenses	2,000
Insurance Premium	1,000
Telephone and Internet	800
Printing and Stationery	700
Postage	500
Depreciation	5,000
Light and Fuel	2,500



Note the following information before calculation:

- a) Food worth ₹ 1,500 was served to staff and was charged ₹ 500 only.
- b) Food worth ₹ 500 was served as complementary.
- c) 2,000 guests were served during the month

Find out (i) Gross Profit (ii) Net Profit (iii) Profit after Wages (iv) Sales Per Cover (v) Gross Profit Percentage to Sales Per Cover.

**Solution:**

**Total Food Cost:**

	₹
Opening Stock	1,000
Add Purchases	22,000
	23,000
Less Closing Stock	1,500
	21,500
Less Staff Meal (1,500 - 500)	1,000
	20,500
Less Free Food Served to Guests	500
	20,000

$$\text{Food Cost Per Cover / Person} = \frac{\text{Total Food Cost}}{\text{No. of Guests}}$$

$$= \frac{20,000}{2,000} = ₹ 10 \text{ Per Cover}$$

$$\begin{aligned} \text{Gross Profit} &= \text{Sale} - \text{Total Food Cost} \\ &= 50,000 - 20,000 = ₹ 30,000 \end{aligned}$$



<b>Total Labour Cost:</b>		₹
Wages and Salary		8,500
E.S.I.		500
Staff Meal	(1,500 - 500)	1,000
<b>Total Labour Cost</b>		<b>10,000</b>

Food and Wages Cost: = Total Food Cost + Total Labour Cost  
 = 20,000 + 10,000 = ₹ 30,000

Profit after Wages: = Sale - Food and Wages Cost  
 = 50,000 - 30,000 = ₹ 20,000

<b>Total Over heads:</b>		₹
Gas and Electricity		2,000
Office Expenses		2,000
Insurance Premium		1,000
Telephone and Internet		800
Printing and Stationery		700
Postage		500
Depreciation		5,000
Light and Fuel		2,500
Complementary Food served to Guests		500
<b>Total Over heads</b>		<b>15,000</b>

Total Cost = Total Food Cost + Total Labour Cost + Total Over heads  
 = 20,000 + 10,000 + 15,000 = ₹ 45,000

Net Profit = Total Sale - Total Cost  
 = 50,000 - 45,000 = ₹ 5,000



$$\text{Sales per Cover} = \frac{\text{Total Sales}}{\text{Total No. of Covers}} = \frac{50,000}{2000} = ₹ 25$$

$$\begin{aligned} \text{Gross Profit per Cover} &= \text{Sales per Cover} - \text{Food Cost per Cover} \\ &= 25 - 10 = ₹ 15 \end{aligned}$$

$$\begin{aligned} \text{Gross Profit Percentage to Sales per Cover} &= \frac{\text{Gross Profit per Cover} \times 100}{\text{Sales per Cover}} \\ &= \frac{15 \times 100}{25} = 60\% \end{aligned}$$

### Illustration 9

Calculate the following

- (i) Cost Percentage; When Cost is ₹ 400 and Sale is ₹ 1,000
- (ii) Cost: When Cost Percentage is 27% and Sales is ₹ 400
- (iii) Sales: When Cost Percentage is 25% and Cost is ₹ 100

#### Solution:

- (i) Cost Percentage:

If ₹ 1,000 is Sale then Cost is ₹ 400

If ₹ 1 is Sale then Cost is ₹ 400

1000

and If ₹ 100 is Sale then Cost is =  $\frac{400 \times 100}{100} = 40\%$

- (ii) Cost

If Rs. 100 is Sale then the Cost is ₹ 27

If Re. 1 is Sale then the Cost is ₹ 27

100

and If Rs. 400 is Sale then the Cost is =  $\frac{27 \times 400}{100} = ₹ 108$



(iii) Sales:

If ₹ 25 is the Cost then the Sale is ₹ 100

If ₹ 1 is the Cost then the Sale is ₹  $\frac{100}{25}$

and If Rs. 100 is the Cost then the Sale is =  $\frac{100 \times 100}{25} = ₹ 400$

### ANSWERS AND QUESTIONS:

Q. 1 The following information's are related to a 100 cover buffet restaurant. The food cost and labour cost will be ₹ 5,000 and ₹ 2,000 respectively. The management wants to recover 15% of sales towards overhead.

You are required to calculate:

- Selling price per cover to make a net profit of 15% and
- Gross profit per cover.

Q. 2 The following information was extracted from the books of a restaurant in respect of June, 1997

	₹
Sales	40,000
Opening Stock	2,500
Closing Stock	3,200
Purchases	12,300
Wages and Salaries	5,600
Gas and Electricity	1,800
Repairs and Renewals	1,000
Rent and Rates	1,800
Insurance	400
Postage and Telephone	200
Printing and Stationery	300
Depreciation	2,000



**You are required:**

- a) to calculate the elements of cost and to express each as a percentage of sales, assuming that ₹ 800 of the food has been used for staff meals.
- b) To calculate the gross profit, after wage profit and net profit.

**Q. 3** Calculate as given under

- a) Food Cost: When food cost percentage is 30% and total sale is ₹ 600
- b) Gross Profit Percentage: When total sale is ₹ 5,000 and total food cost is ₹ 3,000
- c) Sale: When food cost percentage is 25% and total food cost is ₹ 750

**Q. 4** The following information was extracted from ABC Restaurant for the month of December

	₹		₹
Sales	50,000	Office expenses	2,000
Opening Stock	1,000	Insurance Premium	1,000
Purchases	22,000	Telephone & Internet	800
Closing Stock	1,500	Printing & Stationery	700
Wages & Salaries	8,500	Postage	500
E.S.I.	500	Depreciation	5,000
Gas & Electricity	2,000	Light & Fuel	2,500

**Note the following information before calculating:**

- a) Food worth ₹ 1,000 was served free of cost to staff.
- b) Food worth ₹ 500 was served as complimentary.
- c) 2000 guests were served during the month.

**Find Out:**

- (i) Gross profit and percentage gross profit.
- (ii) Net profit and percentage net profit
- (iii) Profit after wages.
- (iv) Net profit per cover.



Q. 5 The following information were obtained from the books of accounts of a restaurant for the month of March

	₹
Sales	1,50,000
Opening Stock	2,800
Purchases	28,000
Salaries & Wages	7,000
Depreciation	5,000
E.S.I.	2,000
Repairs & Maintenance	600
Printing & Stationery	3,000
Accommodation to Staff	1,000
Rent	10,000
Gas & Fuel	1,000
Closing Stock	4,000
Insurance	2,500
Postage & Telephone	1,000

**You are required to calculate:**

- a) Elements of costs and express each as a percentage of sales assuming that ₹ 800 of the food has been used for staff meals and ₹ 1,200 of the food as complimentary meals.
- b) Calculate Gross profit, After Wage profit and Net profit.
- c) Calculate Average Spending Power per customer assuming that 7500 customers were served in the month of March.

Q. 6 A contractor has an order for supply of breakfast to the passengers of a train running daily. The weekly fixed cost will be ₹ 2,000. The variable labour cost will be ₹ 2/-, variable raw material cost will be ₹ 3/- and selling price will be ₹ 10 (all per unit). What sales must the contractor make to earn a profit of ₹ 10,000 per week?

Q. 7 The following information's were obtained from the books of accounts of a restaurant for the month of January.



	₹
Sales	1,00,000
Opening raw materials	10,000
Closing raw materials	20,000
Purchase of raw materials	50,000
Labour cost	15,000
Depreciation	8,000
Rent	2,000
Municipal tax	1,000
Administrative cost	4,000
Selling & Distribution cost	5,000
Upkeep and Service cost	2,500
Repairs and Maintenance cost	2,500

Calculate the following and express each as a percentage of sales:

- (i) Kitchen Profit
- (ii) Net Profit
- (iii) After Wage Profit
- (iv) Elements of Cost

Q. 8 A mixed spice is made up of five ingredients. Find the cost of 40 gms. Of the mixture if the following amounts are used:

Sl.	Ingredients	Quantity	Price
1.	Pepper	0.270 kg.	150 per kg.
2.	Chilly	0.05 kg.	90 per kg.
3.	Coriander	0.10 kg.	40 per kg.
4.	Cumin	0.03 kg.	120 per kg.
5.	Clove	0.25 kg.	220 per kg.



Q. 9 Calculate as given under:

(i) Cost percentage when cost is ₹ 500 and Sale is ₹ 2,000.

(ii) Cost, when cost percentage is 30% and sale is ₹ 1,500

(iii) Sale, when cost percentage is 25% and cost is ₹ 750

(Answer: (i) 40% (ii) ₹ 450 (iii) ₹ 3,000)

Q. 10 Calculate as given under:

(i) Food Cost, when Food Cost Percentage is 30% and Total Sale is ₹ 900

(ii) Gross Profit Percentage, when Total Sale is ₹ 5,000 and Food Cost is ₹ 3,000

(iii) Net Profit Percentage, when Total Sale is ₹ 6,000 and Total Cost is ₹ 4,000

(Answer: (i) ₹ 270 (ii) 40% (iii) 33.33%)

Q. 11 The following figures were extracted from ABC Hotel. Food Cost ₹ 5,000; Labour and Overhead ₹ 2,500; Sales ₹ 15,000. Find as a percentage of Sales: (a) Gross Profit (b) Net Profit

(Answer: (a) 66.67% (b) 50%)

Q. 12 The total cost of the restaurant is ₹ 15,00,000. The fixed cost is as under: Salaries and Wages ₹ 75,000; Office Expenses ₹ 25,000; Insurance ₹ 10,000; Interest ₹ 5,000; Depreciation ₹ 70,000; Rent Rs. 25,000. Variable Cost will be 30% of Sale. Average Selling Price will be ₹ 30 and the total sale will be ₹ 9,00,000. Calculate: Net Profit at desired sale

(Answer: ₹ 4,20,000)

Q. 13 The following information are related to a 150 cover buffet. The food cost and labour cost will be 8,000 and 3,000 respectively. The management wants to recover 20% of sales towards overheads. You are required to calculate

a) Selling price to make a net profit of 25%

b) Net profit per cover.

c) Gross Profit per cover.

d) Average selling price.



Q. 14 The following information was extracted from the books of a restaurant in respect of June.

	₹
Sales	30,000
Opening Stock	2,500
Closing Stock	3,200
Purchases	13,000
Wages and Salaries	5,600
E.S.I.	300
Gas and Electricity	800
Repair and Renewals	1,000
Rent and Rates	1,800
Insurance	400
Postage and Telephone	200
Printing and Stationery	300
Depreciation	2,000

You are required:

- a) To calculate the elements of cost and to express each as a percentage of sales, assuming that ₹ 800 of the food has been used for staff meals and ₹ 500 of the food as complementary.
- b) To calculate the gross profit, after wage profit and net profit.
- c) To calculate the average spending power per customer, assuming that 6,000 customers were served in June.

Q. 15 Draw costing sheet and find the cost per portion of the following:

a) Shortbread biscuits (12 portions)

Flour	150 gms
Caster sugar	50 gms
Margarine	100 gms
Jam	50 gms

b) Queen of puddings (4 portions)

Milk	500 ml.
Caster sugar	100 gms
Butter	25 gms
Eggs	3 in no.



The rate of ingredients are given below

S. No.	Name	Quantity	Rate (Rs.)
1.	Egg	1 no.	1.50
2.	Caster sugar	1 kg.	30
3.	Butter	1 kg.	110
4.	Flour	1 kg.	20
5.	Jam	500 gms	40
6.	Margarine	1 kg.	100
7.	Milk	1 ltr.	15

Q. 16 The following information are related to a 200 cover restaurant. The fixed cost of the restaurant is:

	₹
Rent	800
Interest	500
Salary	800
Depreciation	900

You are required to calculate the following assuming the food cost is ₹ 800

- (i) Selling price to make a net profit of 25%.
- (ii) Net profit per cover
- (iii) Gross profit per cover
- (iv) Average selling price.

Q. 17 Calculate as given under

- (i) Cost percentage, when Cost is ₹ 300 and Sale is ₹ 1,000.
- (ii) Cost, when Cost percentage is 40% and Sales is ₹ 800
- (iii) Sales, when Cost percentage is 30% and Cost is 120



- Q. 18 The following information was extracted from the books of a restaurant in respect of December: Sales ₹ 60,000; Opening Stock ₹ 5,000; Closing Stock ₹ 6,400; Purchases ₹ 26,000; Wages and Salaries ₹ 11,200; Medical ₹ 600; Power and Fuel ₹ 1,600; Repairs and Renewals ₹ 2,000; Rent and Rates ₹ 3,600; Insurance ₹ 800; Postage and Telephone ₹ 400; Printing and Stationery ₹ 600; Depreciation ₹ 4,000. You are required:
- To calculate the elements of cost and to express each as a percentage of sales assuming that ₹ 1,600 of the food as complementary.
  - To calculate the Gross Profit, After Wage Profit and Net Profit and their percentage.
  - To calculate the Average spending power for customer, assuming 6,000 customers were served in December.
- Q. 19 Calculate as given under:
- Cost Percentage, when cost is ₹ 200 and Sales is ₹ 500
  - Cost, when cost percentage is 28% and sales is ₹ 500
  - Sales, when cost percentage is 30% and cost is ₹ 90



# 2 Chapter

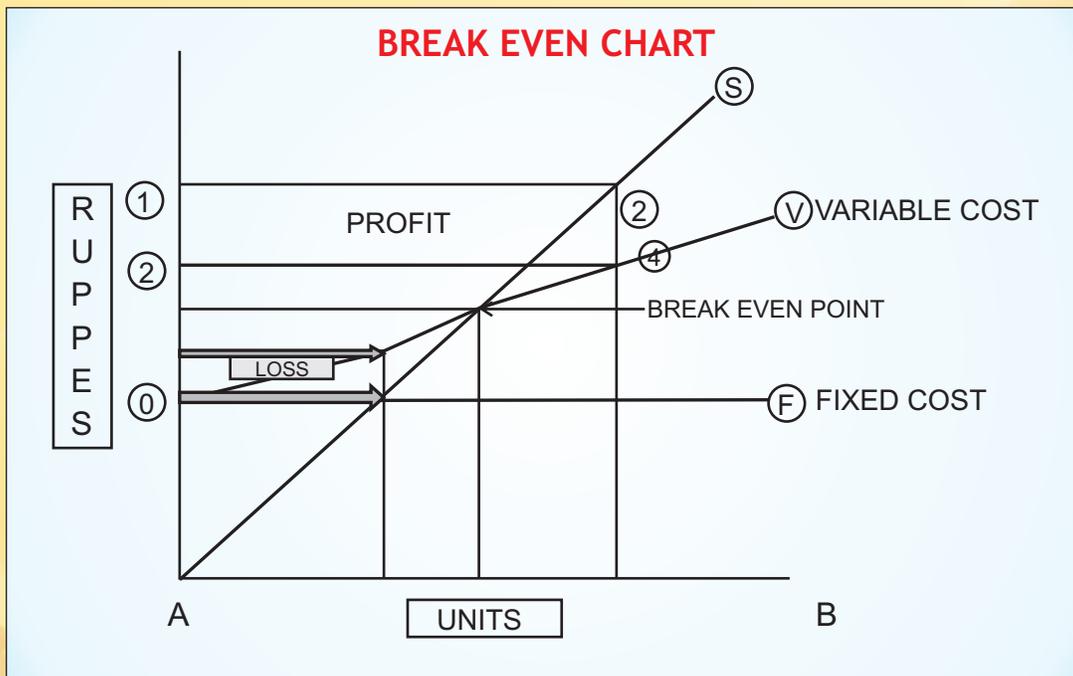
## Cost and Costing

**Learning objectives :** At the end of the unit learners would be able to :

- (a) Understand concept of break even part.
- (b) Calculate & understand concept Food lost, Margin of Safety & Break even point.

### Break Even Point

Break Even Point is the point of sale at which one makes neither profit nor loss. In other words it means that the sale is equal to the total cost. This can be explained in the chart below.





Break Even Point is that volume of sales or production where there is neither profit nor loss

Sale - Food Cost (Variable Cost) = Contribution

Contribution is also termed as Gross Profit.

P/V Ratio:

The ratio of contribution to sales is the P/V Ratio. The fixed cost remains constant in the short term. The P/V ratio will measure the rate of change of profit due to change in sales. The P/V ratio can be expressed in the following way.

$$\text{Profit Volume Ratio (P/V Ratio)} = \frac{\text{Contribution}}{\text{Sale}} \times \frac{100}{1}$$

Where Contribution = Sale - Variable cost (cost of sales or marginal cost)

Sales = Sale X P/V Ratio

Sales = Contribution

P/V Ratio

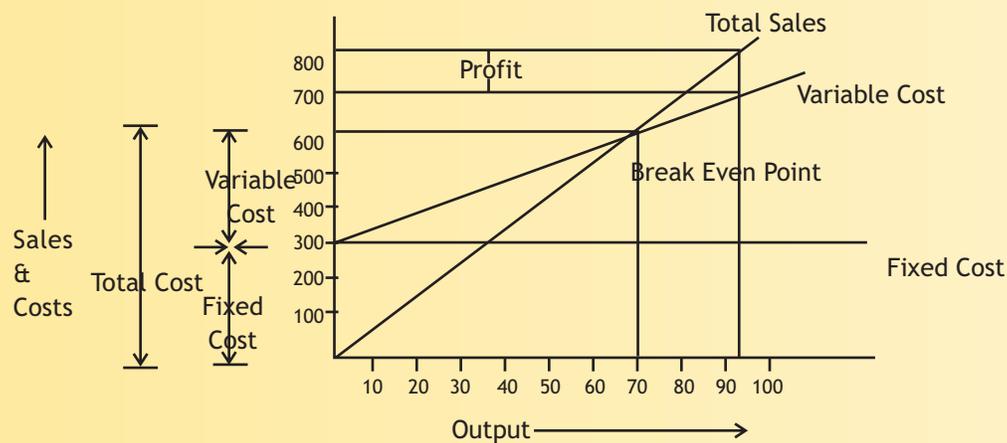
Break Even Point (in units) =  $\frac{\text{Total Fixed Cost}}{\text{Contribution (per unit)}}$

Break Even Point (sale) =  $\frac{\text{Total Fixed Cost}}{\text{P/V Ratio}}$

Volume of Sale at Desired Profit =  $\frac{\text{Total Fixed Cost} + \text{Desired Profit}}{\text{P/V Ratio}}$

Total Units of Sale at Desired Profit =  $\frac{\text{Total Fixed Cost} + \text{Desired Profit}}{\text{Contribution (per unit)}}$

Break Even Profit can also be expressed in the form of chart:



If the restaurant serves 70 covers then its total sale and total cost is ₹ 600. That means ₹ 600 sale is B.E.P. sale. 70 covers sale | B.E.P. (in units) sales. At this sale volume the restaurant will neither make profit nor loss. The fixed cost of the restaurant is ₹ 300 and variable cost is ₹ 300 at B.E.P. sale of ₹ 600. Thus

$$\text{Sale} = \text{Fixed Cost} + \text{Variable Cost}$$

i.e.  $\text{₹ } 600 = \text{₹ } 300 + \text{₹ } 300$

If the restaurant makes sale of more than ₹ 600 then it will make a profit as explained in the chart above, the restaurant when makes the sale of ₹ 800 then it makes a net profit of ₹ 100. Thus

$$\text{Net Profit} = \text{Sale} - \text{Variable Cost} + \text{Fixed Cost}$$

i.e.  $\text{₹ } 100 = \text{₹ } 800 - \text{₹ } 400 + \text{₹ } 300$

The sale of ₹ 200 over and above the B.E.P. sale is called the 'Margin of Safety'. In case, the restaurant is having a large margin of safety that means the restaurant business is very sound. Margin of safety can also be improved lowering fixed cost and variable cost, without affecting or deteriorating the quality of product, increasing volume of sales.

$$\text{Margin of Safety} = \text{Actual Sales} - \text{Sales at B.E.P.}$$

**Illustration:**

A restaurant sale varies from 20,000 to 25,000 covers in a month. The fixed cost for the restaurant is ₹ 9,00,000 a month. The average sale per cover is ₹ 120 and the food cost is 50%.



You are required to find out

- Break Even Point in Unit
- Break Even Sales
- Margin of Safety in units at 20,000 covers and at 25,000 covers.
- Profit at Maximum level

**Solution:**

$$\text{Food Cost} = \frac{50 \times 120}{100} = ₹ 60$$

$$\text{Break Even Point (in units)} = \frac{\text{Fixed Cost}}{\text{Contribution (per unit)}}$$

$$\begin{aligned} \text{Where, Contribution (per unit)} &= \text{Sale (per unit) - Food Cost (variable cost)} \\ &= 120 - 60 = ₹ 60 \end{aligned}$$

$$\text{Break Even Point (in units)} = \frac{9,00,000}{60} = 15,000 \text{ covers}$$

$$\begin{aligned} \text{Break Even Sales} &= \text{B.E.P. (in units) X Sale Per Cover} \\ &= 15,000 \times 120 = ₹ 18,00,000 \end{aligned}$$

The other formula to find out Break Even Sales is as follows:

$$\text{Break Even Sales} = \frac{\text{Total Fixed Cost}}{\text{P/V Ratio}}$$

$$\text{Where, P/V Ratio} = \frac{\text{Contribution}}{\text{Sale}} \times \frac{100}{1}$$

$$\begin{aligned} \text{Contribution} &= \text{Sale - Variable Cost} \\ &= 120 - 60 = ₹ 60 \end{aligned}$$

$$\text{P/V Ratio} = \frac{60 \times 100}{120} = 50\%$$

$$\text{Therefore, Break Even Sales} = \frac{9,00,000 \times 100}{50} = ₹ 18,00,000$$



Margin of Safety (in units) = actual sale (in units) - B.E.P. (in units)

(i) 20,000 units - 15,000 covers = 5000

(ii) 25,000 units - 15,000 covers = 10,000

Margin of Safety at 20,000 cover's sale = 5,000 units

Margin of Safety at 25,000 cover's sale = 10,000 units

Profit at Maximum Level:

Total Sale = 25,000 units X 120 = ₹ 30,00,000

Variable Cost = 50% of Sale  

$$= \frac{30,00,000 \times 50}{100} = ₹ 15,00,000$$

Fixed Cost = ₹ 9,00,000

Total Cost = Variable Cost + Fixed Cost  

$$15,00,000 + 9,00,000 = ₹ 24,00,000$$

Profit at Maximum Level = Sale - Total Cost  

$$= 30,00,000 - 24,00,000 = ₹ 6,00,000$$

### Illustration:

Mr. X has opened a restaurant and his total investment is ₹ 4,00,000. His fixed cost for the month of December is:

Salaries and Wages	₹ 64,000
Office Expenses	₹ 5,000
Interest @ 2% of total investment	
Insurance	₹ 4,000
Advertisement	₹ 9,000



Variable cost is 70% of unit's sales value. Average selling price per unit is ₹ 30 and the total sale is ₹ 6,00,000 for the month

Find out

- a) Break Even Point (in units)
- b) Break Even Sales
- c) Net Profit.

**Solution:**

Total Fixed Cost :

	₹
Salaries and Wages	64,000
Office Expenses	5,000
Interest @ 2% on ₹ 4,00,000	8,000
Insurance	4,000
Advertisement	9,000
<b>Total Fixed Cost</b>	<b>90,000</b>

Contribution = Sale - Food Cost (variable cost)

Where, Food Cost =  $70 \times 30 = ₹ 21$   
100

Contribution =  $30 - 21 = ₹ 9$

**Break Even Point (in units)**

= Fixed Cost  
Contribution (per unit)  
=  $90,000 \div 10,000 = 9$

Break Even Sales = Break Even Point (in units) X Sale per cover  
=  $10,000 \times 30 = ₹ 3,00,000$



The other way to find Break Even Sales is as follows:

$$\begin{aligned} \text{Break Even Sales} &= \frac{\text{Total Fixed Cost}}{\text{P/V Ratio}} \\ \text{Where, P/V Ratio} &= \frac{\text{Contribution (per unit)} \times 100}{\text{Sale (per unit)}} \\ \text{Contribution} &= \text{Sale} - \text{Variable Cost} \\ &= 30 - 21 = ₹ 9 \\ \text{P/V Ratio} &= \frac{9 \times 100}{30} = 30\% \\ \text{Therefore, Break Even Sales} &= \frac{90,000 \times 100}{30} = ₹ 3,00,000 \\ \text{Net Profit} &= \text{Sale} - \text{Total Cost} \\ \text{Where, Total Cost} &= \text{Variable Cost} + \text{Fixed Cost} \\ \text{Variable Cost} &= \frac{70 \times 6,00,000}{100} = ₹ 4,20,000 \\ \text{Fixed Cost} &= ₹ 90,000 \\ \text{Total Cost} &= 4,20,000 + 90,000 = ₹ 5,10,000 \\ \text{Net Profit} &= 6,00,000 - 5,10,000 = ₹ 90,000 \end{aligned}$$

### Illustration

A restaurant sale is 15,000 covers in a month and it operates at a food cost of 50%. Average sale per cover is ₹ 200. The total fixed cost is ₹ 6,00,000.

You are required to

- Draw a Break Even Chart
- Find Break Even Point (in units)
- Find Break Even Sales
- Find Margin of Safety (in units)
- Margin of Safety (in Sales)



**Solution:**

$$\text{Break Even Point (in units)} = \frac{\text{Fixed Cost}}{\text{Contribution (per unit)}}$$

$$\text{Where, Contribution} = \text{Sale} - \text{Food Cost}$$

$$= 200 - 100 = ₹ 100$$

$$\text{Break Even Point (in units)} = \frac{6,00,000}{100} = 6,000 \text{ covers}$$

$$\text{Break Even Sales} = \text{Break Even Point (in units)} \times \text{Sale per cover}$$

$$= 6,000 \times 200 = ₹ 12,00,000$$

$$\text{Break Even Sales} = \frac{\text{Total Fixed Cost}}{\text{P/V Ratio}}$$

$$\text{Where P/V Ratio} = \frac{\text{Contribution} \times 100}{\text{Sale}}$$

$$= \frac{100 \times 100}{200} = 50\%$$

$$\text{Therefore, Break Even Sales} = \frac{6,00,000}{50} = ₹ 12,00,000$$

$$\text{Margin of Safety (in units)} = \text{Total Sale (in units)} - \text{B.E.P. (in units)}$$

$$= 15,000 - 6,000 = 9,000 \text{ covers}$$

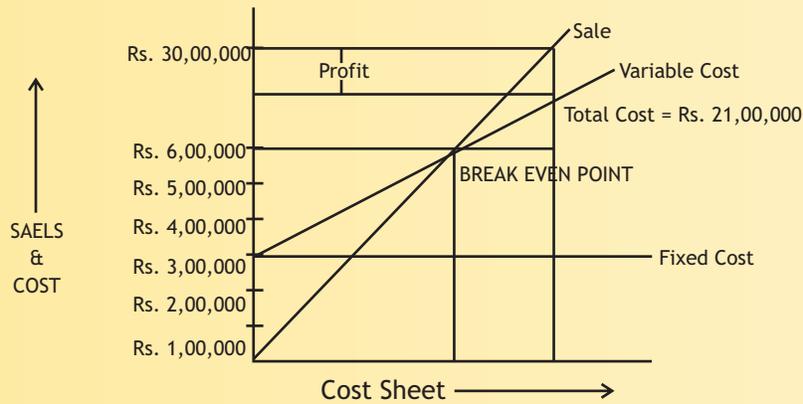
$$\text{Margin of safety (in Sales)} = \text{Total Sale} - \text{Break Even Sales}$$

$$\text{Where, Total Sale} = 15,000 \times 200 = ₹ 30,00,000$$

$$\text{Therefore, Margin of Safety (in sales)} = 30,00,000 - 12,00,000 = ₹ 18,00,000$$



## Break Even Chart



### ANSWERS AND QUESTIONS:

- Q. 1. What is Break Even Point? How it helps management in knowing the financial position of the hotel?
- Q. 2. Explain Break Even Point with the help of chart.
- Q. 3. What do you mean by Margin of Safety? Explain in detail with examples.
- Q. 4. What are P/V ratio, contribution and volume of sale at desired profit.
- Q. 5. Calculate as given under:
- Cost Percentage, when Cost is ₹ 500 and Sale is ₹ 2,000
  - Cost, when Cost Percentage is 30% and Sale is ₹ 1,500
  - Sale, when Cost Percentage is 25% and Cost is ₹ 750
- (Answers a) 40%, b) ₹ 450 c) ₹ 3,000)
- Q. 6 Calculate as given under:
- Food Cost, when Food Cost Percentage is 30% and Total Sale is ₹ 900
  - Gross Profit Percentage, when Total Sale is ₹ 5,000 and Food Cost is ₹ 3,000
  - Net Profit Percentage, when Total Sale is ₹ 6,000 and Total Cost is ₹ 4,000
- (Answers a) Rs. 270 b) 40% c) 33.33%)



Q. 7. The following figures were extracted from ABC Hotel, Food Cost ₹ 5,000; Labour and Overhead ₹ 2,500; Sales ₹ 15,000. Find as a percentage of sales

- a) Net Profit
- b) Gross Profit

Answers a) 50% b) 66.67%

Q. 8. The total cost of the restaurant is ₹ 15,00,000. The fixed cost is as under : Salaries and Wages ₹ 75,000; Office Expenses ₹ 25,000; Insurance ₹ 10,000; Interest ₹ 5,000; Depreciation ₹ 70,000; Rent ₹ 25,000. Variable Cost will be 30% of Sale. Average Selling Price will be ₹ 30 and the total sale will be ₹ 9,00,000.

Calculate:

- a) Break Even Sales
- b) Net Profit at desired sale

Answers

- a) ₹ 3,00,000
- b) ₹ 4,20,000

Q. 9. The total fixed cost is ₹ 4,00,000. The food cost is 60% of sale and the average selling price per guest is ₹ 50.

Find out

- a) B.E.P.
- b) Sale at a desired profit of ₹ 2,00,000

Answer a) 20,000 units / guests b) ₹ 15,00,000

Q. 10. A restaurant's sales varies from 25,000 to 30,000 covers in a month and the food cost of the restaurant is 30% and average sale per cover / guest is ₹ 50. The total fixed cost is ₹ 7,00,000.

Find out



- a) B.E.P
- b) B.E. Sales
- c) Profit at the sale of 30,000 covers

Answers: a) 2,000 covers b) ₹ 10,00,000 c) ₹ 3,50,000

Q. 11. The following information is related to a 150 cover buffet. The food cost and labour cost will be ₹ 8,000 and ₹ 3,000 respectively. The management wants to recover 20% of sales towards overhead.

You are required to calculate:

- a) Selling price to make a net profit of 25%
- b) Net profit per cover
- c) Gross profit per cover
- d) Average selling price.

Q. 12. The following information was extracted from the books of a restaurant in respect of June.

	₹
Sales	30,000
Opening Stock - 1st June	2,500
Closing Stock - 30th June	3,200
Purchases	13,000
Wages and Salaries	5,600
E.S.I.	300
Gas and Electricity	800
Repair and Renewals	1,000
Rent and Rates	1,800
Insurance	400
Postage and Telephone	200
Printing and Stationery	300
Depreciation	2,000



You are required:

- a) To calculate the elements of cost and to express each as a percentage of sales, assuming that ₹ 800 of the food has been used for staff meals and ₹ 500 of the food as complementary.
- b) To calculate the gross profit, after wage profit and net profit
- c) To calculate the average spending power per customer, assuming that 6,000 customers were served in June.

Q. 13. A business man plans to open a new restaurant. His equity investment for equipment, furniture and remodeling will be ₹ 3,00,000. Fixed costs per year will be:

Management and other Salaries	₹ 43,000
Administrative and General Expenses	₹ 7,500
Marketing Expenses	₹ 5,000
Insurance	₹ 2,500
Rent	₹ 24,000
Depreciation	₹ 29,600

Variable cost will be 70% of unit's sales value. Average selling price per unit will be ₹ 30. Annual revenue is expected to be ₹ 5,00,000

- a) Calculate the Break Even Sales level of the restaurant
- b) What will be the Net Income at the expected sale?

Q. 14. The following information is related to a 200 cover restaurant. The fixed cost of the restaurant is

Rent	₹ 800
Interest	₹ 500
Salary	₹ 800
Depreciation	₹ 900

You are required to calculate the following assuming the food cost is ₹ 800.



- a) Selling price to make a net profit of 25%
- b) Net profit per cover
- c) Gross profit per cover
- d) Average selling price.

Q. 15. Calculate s give under

- a) Cost percentage, when cost is ₹ 300 and sale is ₹ 1,000
- b) Cost, when cost percentage is 40% and sales is ₹ 800
- c) Sales, when cost percentage is 30% and cot is ₹ 120

Q. 16. The following information was extracted from the book of a restaurant in respect of December.

Sales	Rs. 60,000
Opening Stock	Rs. 5,000
Closing Stock	Rs. 6,400
Purchases	Rs. 26,000
Wages and Salaries	Rs. 11,200
Medical	Rs. 600
Power and Fuel	Rs. 1,600
Repairs and Renewals	Rs. 2,000
Rent and Rates	Rs. 3,600
Insurance	Rs. 800
Postage and Telephone	Rs. 400
Printing and Stationery	Rs. 600
Depreciation	Rs. 4000



**You are required:**

- a) To calculate the elements of cost and to express each as a percentage of sales assuming that ₹ 1,600 of the food as complementary.
- b) To calculate the gross profit, after wage profit and net profit and their percentage
- c) To calculate the average spending power per customer, assuming that 6,000 customers were served in December.

Q. 16. Find out a) Break Even Point b) Break Even Sales c) Margin of Safety t the sale of ₹ 40,000. The total fixed cost is ₹ 9,000 and the food cost is 70% and the selling price is ₹ 30.



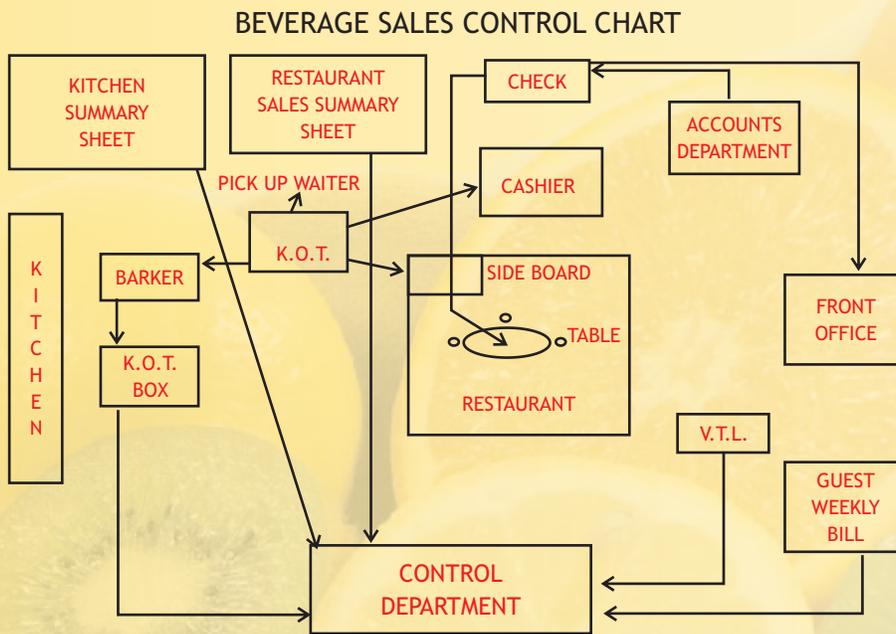
# 3 Chapter

## Beverage Control

**Learning Objectives :** At the end of this unit learners would be able to :

- (a) Understand concept Beverage sales, Beverage sales control, Beverage check.
- (b) Calculate bar order ticket (BOT), Beverage summary sheet.
- (c) Understand concept of guest weekly bill (GWB) & visitors tabular ledger (VTL).
- (d) Learn different instruments used for Beverage Sales Control.

To ensure that staff does not get tempted to pilferage the cash sales, certain control procedures are developed for the restaurants / bars and other points of sales.





The instruments used for the beverage sales (cash) control are as follows:

1. Beverage Order Ticket (B.O.T.)
2. Restaurant / Bar Check
3. Beverage Summary Sheet
4. Restaurant / Bar Sales Summary Sheet
5. Guest Weekly Bill
6. Visitor's Tabular Ledger (V.T.L.)

#### 1. Beverage Order Ticket (B.O.T.) :

The four copies of Beverage Order Ticket (B.O.T.) are prepared. The order is taken by the captain on BOT. In case of Restaurant the order is taken on Kitchen Order Ticket (K.O.T.). The original copy of the BOT is given to the bar man to place the order. After the drink has been picked up by the pick-up waiter, this copy of BOT is kept in the locked BOT box. This box is taken by the control department at the end of the day or shift. The first carbon copy is given to cashier so that he can make the check. The second carbon copy is given to pick-up waiter so that he can pick up the drink from the bar. The last copy is kept at the side stand for the reference of captain or stewards and this helps in service. The specimen of the BOT is given below



**BEVERAGE ORDER TICKET  
ABC RESTAURANT**

**B.O.T. NO. 32567**

**DATE .....**

**TIME .....**

TABLE NO	WAITER NO	NO OF PAX	CHEQUE NO

QUANTITY	PARTICULARS
	PLEASE DO NOT PAY ON THIS

**CAPTAIN'S SIGNATURE**



**1. BEVERAGE CHECK:**

Beverage check is either prepared by cashier or waiter but is usually priced and totaled by cashier. To pick-up the drink the check is shown by pick-up waiter and the check items are ticked by the bar man before giving the drinks. On demand, all four copies of the check are presented to the guest. The guest either pays in cash or he signs and writes his name and room number or he settles his bill through credit card / debit card. If he pays cash than the original copy of the check is returned to him with the stamp of paid and cashiers signature as a receipt. But in case he signs as a resident or as a credit / debit card holder than original copy is send to front office and finally to accounts department and the first carbon copy is given to the guest for his reference. The second carbon copy is send to accounts department and the third carbon copy is for control department. The specimen of Beverage Check is here below.

**BEVERAGE CHECK**

ABC HOTEL

27, THE MALL, SHIMLA

e mail address abchotel@xyx.com

CHECK NO. 23564

TABLE NO. ....

DATE .....

NO. OF PAX .....

TIME .....

NAME OF THE GUEST .....

ROOM NO. ....

TABLE NO	WAITER NO	NO. OF PAX	B.O.T. NO.







## 1. BEVERAGE SALES SUMMARY SHEET

On this summary sheet cashier maintains the complete record of restaurant sales. When he issues a check to pick up waiter, he gets his signature and when he (waiter) returns the check to the cashier than the lower perforated portion of the check (stub), along with cashier's signature and stamp, is returned to the waiter and this is his proof that he has returned the check to the cashier. In case this check is lost than the responsibility is fixed on cashier or waiter and who-so-ever is held responsible, is required to pay the price of the check and a fine of Rs. 1,000. The bar sales summary sheet is prepared in duplicate and a copy each is send to the accounts department and control department.

### BEVERAGE SALES SUMMARY SHEET

Restaurant Name .....

Date .....

Time .....

SHIFT: FROM ..... TO .....

{ Dr. } { Cr. }

C. No.	T. No.	No. of Pax	Time	W. No.	SALE						Cash	Dis	L	Rem	Sig
					Food	Bev	Liq	Tob	Vat S.T.	Service Charge					



Bar Manager ..... Head Cashier ..... Cashier .....

Note: C. No. = Check Number, T. No. = Table Number, Bev. = Beverage, Liq. = Liqueur, Tob. = Tobacco, S.T. = Sales Tax, Dis. = Discount, L. = Ledger, Rem. = Remarks, Sig. = Signature (Cashier's)

In case guest settles his bill in cash than the amount received is shown in the cash column and discount allowed is shown in the discount column. In case the guest settles his bill by signing (either as a hotel resident or as a credit card / debit card holder) than the total amount is shown in the ledger column and in the remarks column the Room Number, Name of the Guest, Credit Card Number / Debit Card Number and other details are entered. Cashier signs in the Signature column. From food to total column are termed as debit side and cash, discount and ledger column are treated as credit side of the bar sales summary sheet.

### 1. GUEST WEEKLY BILL (GWB)

For each resident of hotel a guest weekly bill / bill folio is prepared. All debit and credit (if any) vouchers along with room tariff are posted in this bill and as soon as guest desires to check out this bill is presented to him for settlement. For control purposes a copy each of this is send to control department and accounts department. But the original copy is given to the guest as his receipt.

#### GUEST WEEKLY BILL

<b>ABC HOTEL NEW DELHI</b>	
T. NO.	SERIAL NO. 23465
FAX NO	
E MAIL	
ROOM NUMBER .....	.....
NAME OF THE GUEST MR./MS .....	.....
Nationality .....	.....
Designation .....	.....
Office Address.....	E.mail..... T.No.....
Parmanent Address.....	E.mail..... T.No.....
Date and time of arrival .....	Date and time of departure .....
Type of room .....	Number of Pax .....
Rate .....	Apartment.....Board .....
Telephone meter reading : closing.....	(-) Opening .....
Consumption .....	..... (=)
Plan.....	Billing instructions .....
Credit Card.....	Card Number .....
Date of Expiry.....	.....
Booked by .....	.....



## FRONT OFFICE OPERATIONS AND MANAGEMENT

DATE \_\_\_\_\_

DAY	₹	₹	₹	₹	₹	₹	₹	₹	₹	
APARTMENT		p		p		p		p		p
BOARD										
BED TEA										
LUNCH										
DINNER										
TEA / COFFEE										
SNACKS										
FOOD SUNDRIES										
SOFT DRINKS										
WINE / BEER										
HARD DRINKS										
SALES TAX / VAT										
LUXURY TAX										
SUR-CHARGE										
TELEPHONE										
LAUNDRY										
TOBACCO										
FLOWERIEST										
NEWS STAND										
V.P.O.										
MISCELLANEOUS										
TRANSFER										
DAILY TOTAL										
BALANCE B/F	DR									
	CR									
GRAND TOTAL	DR									
	CR									
DEPOSIT / CASH										
ALLOWANCES / DISCOUNT										



## FRONT OFFICE (ACCOUNTING)

LEDGER																				
TRANSFER																				
BALANCE C/F DR																				
CR																				
TOTAL DR																				
CR																				

Checked and found correct.

Please forward the bill to

.....  
 .....

Cashier .....

Signature of the Guest

**Note :** Bill are payable on presentation. Personal cheques are bit accepted. Please ask for a acash receipt along with a copy of the bill. No tipping please.

**Note :** G.R. No. = Guest Registration Number VAT = Value Added Tax, V.P.O. = Visitors Paid Out, Dr = Debit, Cr = Credit, B/F=Brought Forward, C/F=Carried Forward.

### ADVANTAGES OF GUEST WEEKLY BILL:

1. **Easy :** It is an easy system to understand and after a day’s training cashier can be asked to prepare the guest weekly bill.
2. **Economical :** The bill is prepared in the ruled sheets so it does not cost much money. The quality and format of bill is made in such a way so that it looks attractive and can be presented to guest for settlement.
3. **Fewer mistakes :** Vouchers are debited directly. The chances of making mistakes are minimizer.
4. **Telephone Bills :** The opening and closing telephone meter reading is recorded on the bill itself and it helps in controlling the telephone bill and guest also feels that he has been charged appropriately for telephone charges.
5. **Cross checking :** In case of any controversy coross-checking can be done with the help of vouchers



## 1. VISITOR'S TABULAR LEDGER (VTL)

For all the hotel residents of a day a visitor's tabular ledger is prepared. For every day a new ledger is prepared. On this ledger the room rent and all the vouchers for the entire guests are recorded. The visitor's tabular ledger gives the total sale of the residents of the hotel (but cash paid by residents at the points of sale is not recorded here). A copy each of this ledger I send to the control department and accounts department. This is also called a day book.

### VISITORS TABULAR LEDGER

ROOM NO	101	102	103	104	105	201	202	203	Total							
NAME																
NATIONALITY																
TYPE OF RCOM																
NUMBER OF ARRIVAL																
TIME OF ARRIVAL																
DATE OF DEPARTURE																
TIME OF DEPARTURE																
PLAN																
RATE APARTMENT																
BOARD	₹	P.	₹	P.	₹	P.	₹	P.	₹	P.	₹	P.	₹	P.	₹	P.
APARTMENT																
BOARD																
BED TEA																
BREAK FAST																
LUNCH																
DINNER																
TEA / COFFEE																
SNACKS																
FOOD SUNDRIES																
SOFT DRINKS																
WINE / BEER																
HARD DRINKS																
SALES TAX / VAT																
LUXURY TAX																





### Disadvantages of Guest Weekly Bill -

- (a) Guest weekly bill is hand made so it becomes very untidy at times and not presentable.
- (b) Same Cashier's handwriting may not be legible.
- (c) All totals are made manually so there is more possibility of making totaling mistakes.

In case the hotel has computerized accounting system than the bar sales summary sheet, guest weekly bill, bar summary sheet and visitor's tabular ledger are automatically made and the control department can have their printouts on their computers. In some hotels a separate BOT is not prepared: the bar check is prepared by machine / computer. The monitor of bar (computer) shows the order and a BOT in leaf form is not given to bar man. For ordering the beverages there is no need to show the check because order is only placed through computer and the order can not be cancelled without the knowledge of bar.

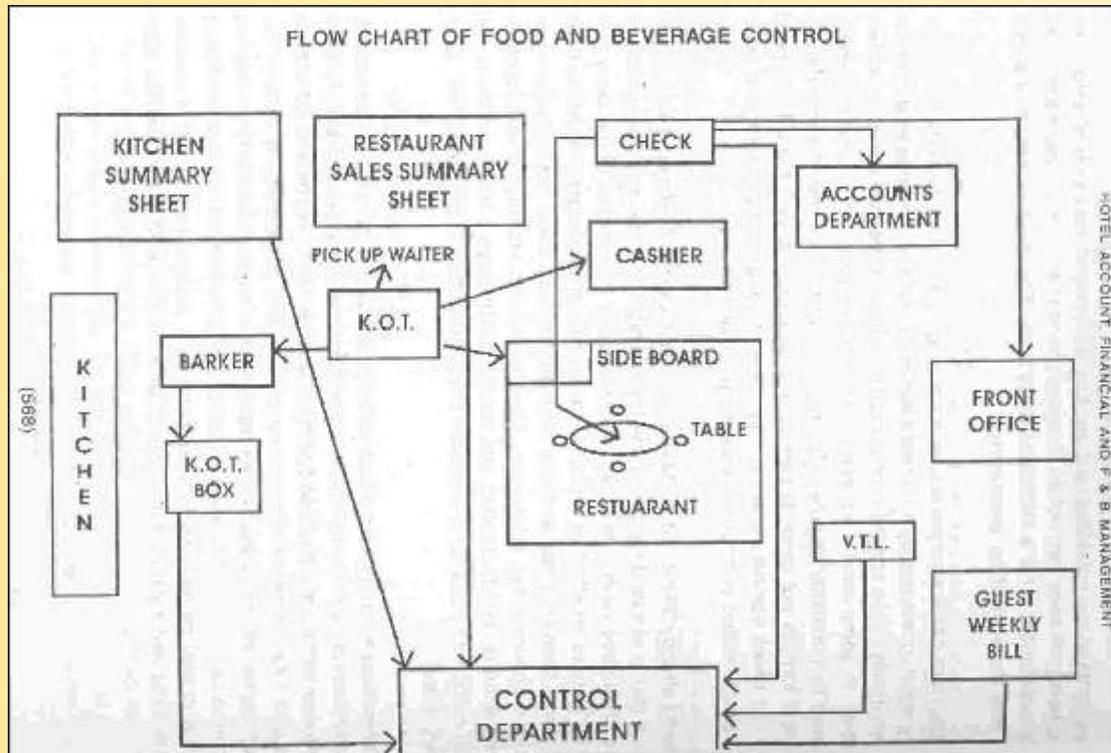
The cash sale is made at various points of sale through out the day and night. A hotel may make a couple of millions of Rupees cash sale a day. A cashier may be tempted to run away with the cash. To have an affective control of cash the hotel's management usually does not appoint a cashier unless and until they are very sure about his credentials and they take minimum of two references. Usually cashiers are rotated very regularly from one point of sale to another and head cashier keeps a watch on them. All the cash collected by cashier is deposited to the front office cashier along with sales summary sheet.

The imp rest / float amount given to cashier is checked quite regularly by head cashier, accountant and control department. The cashiers are not allowed to keep imp rest / float money with them but is also deposited at hotel or handed over to the cashier of next shift. All the check books are numbered and in case of any cuttings the checks must be counter signed by the manager. The front office cashier is required to prepare a cash book. All the cash received must be banked. Except front office cashier, who may be required to make petty cash payments on behalf of resident guests against visitor paid out, no other cashier is authorized to pay from the cash sales.



**Assignment:** Prepare a 'Beverage Control System Flow Chart' with each step explained in detail

### BEVERAGE SALES CONTROL CHART



**Assignment:** Prepare the following formats and fill them with imaginary entries.

1. Kitchen Order Ticket (K.O.T.)
2. Restaurant Check
3. Restaurant Sales Summary Sheet
4. Kitchen Summary Sheet
5. Visitor's Tabular Ledger
6. Guest Weekly Bill

Draw the Restaurant Sales Control flow chart and show the above mentioned six instruments. Explain the role of each instrument in the Restaurant Sales Control.





## **CENTRAL BOARD OF SECONDARY EDUCATION**

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