Roll No……………. Maximum Marks - 50

Total No. of Questions - 3 Total No. of Printed Pages -3

Time Allowed - 2 Hours

Marks

Attempt all questions. Working notes should form part of the answer.

1. The following is the Trial Balance of Amar and Co. on 31st December 2015. **15**

Particulars	Dr. Rs.	Cr. Rs.
Cash in Hand	540	
Cash at Bank	2,630	
Purchase Account	40,675	
Sales Account		98,780
Return Inward Account	680	
Return Outward Account		500
Wages Account	10,480	
Fuel and Power Account	4,730	
Carriage on Sales Account	3,200	
Carriage on Purchase Account	2,040	
Stock as on 01 April 2015	5,760	
Building Account	30,000	
Freehold Land Account	10,000	
Machinery Account	20,000	
Patents Account	7,500	
Salaries Account	15,000	
General Expense Account	3,000	
Insurance Account	600	
Drawings Account	5,245	
Capital Account		71,000
Sundry Debtors	14,500	
Sundry Creditors		6,300
Total	176,580	176,580

Adjustments:

(a) Stock at the end at cost Rs. 6,800 (market-value Rs. 7,000.

(b) Machinery is to be depreciated at the rate of 10% and Patents at the rate of 20%.

(c) Salaries for the month of December 2015 amounting to Rs 1,500 were unpaid.

(d) Insurance includes a premium of Rs. 170 per annum a policy which expires on 30th June 2016.

(e) Wages include a sum of Rs. 2,000 spent on the erection of cycle shed for employees and customers.

(f) A provision for Bad and Doubtful Debts is to be created to the extent of 5% of Sundry Debtors.

You are required to prepare Trading and Profit and Loss account for the year ended on 31 December 2015 and Balance sheet as on that date.

Answer:

Amar and Co.
Trading and Profit and Loss Account
For the year ended on 31 December 2015

Particulars	Amount (Rs.)	Particulars	Amount(Rs.)
To Opening Stock	5,760	By sales 98,780	
To Purchases 40,675		Less: Returns 680	98,100
Less: Returns 500	40,175	By Closing Stock	6,800
To Wages 10,480			
Less: Cycle Shed 2,000	8,480		
To Fuel & Power	4,730		
To Carriage on Purchase	2,040		
Gross Profit C/d	43,715		
	104,900		**104,900**
To Salaries 15,000		By Gross Profit b/d	43,715
Add: Outsanding Salary 1,500	16,500		
To Carriage on Sales	3,200		
To General Expense	3,000		
To Insurance Account 600			
Less: Prepaid 85	515		
To Provision for Bad and Doubtful A/c	725		
To Depreciation			
Machinery 2,000			
Patents 1,500	3,500		
To Net Profit	16,275		
	43,715		**43,715**

Balance Sheet of Amar and Co.
As on 31 December 2015

Liabilities	Amount (Rs.)	Assets	Amount(Rs.)
Capital Account 71,000		Machinery 20,000	
Less: Drawings 5,245		Less: Depreciation 2,000	18,000
65,755		Patent 7,500	
Add Net Profit 16,275	82,030	Less: Depreciation 1,500	6,000
Sundry Creditors	6,300	Building 30,000	
Outstanding Salaries	1,500	Add: Cycle Shed 2,000	32,000
		Freehold Land	10,000
		Closing Stock	6,800
		Sundry Debtors Less Provision	13,775
		Insurance Prepaid	85
		Cash at Bank	2,630
		Cash in Hand	540
	89,830		**89,830**

2.

a) You are given the Balance Sheet of M/S JNW & Co. as on 31.12.2015 consisting of three partners Mr. J, Mr. N and Mr. W sharing profits and losses equally.

JNW & Co.
Balance Sheet as at 31.12.2015

Liabilities	Rs.	Assets	Rs.
Capital Accounts:		Plant and Machinery	236,500
J	100,000	Furniture	45,000
N	160,000	Stock	200,000
W	140,000	Debtors	205,400
Creditors	100,000	Bank Balance	113,100
Loan	300,000		
Total	800,000	Total	800,000

Mr. N died on 1.1.2016. The following information is available:

1) Rs. 22,600 received from Mr. Y as rent was credited to Y's Account. He has already a debit balance for other transactions.

2) Machine purchased on 26.12.2015 for Rs. 60,000 was debited to purchase account. An erection charge of Rs. 10,000 was charged to repairs account.

3) Interest of Rs. 24,080 was paid in advance. But the entire amount was charged to profit and loss account in 2015.

4) Machine is valued at 20% below the book value after adjustment for (ii) above.

5) Debtors are estimated to be worth 95% of book value.

6) Goodwill account is to be raised to the extent of deceased partners' share. Goodwill is to be valued at three years' purchase of the average profits of the years 2013, 2014 and 2015.

7) Profits for the years 2013, 2014 were Rs. 180,000 and Rs. 200,000 respectively. Profit for the year 2015 subject to the adjustments (i), (ii) and (iii) above was Rs. 138,420.

8) One-half of the dues to the deceased are to be met immediately by cash to be brought in by continuing partners in their profit sharing ratio. Balance will continue as loan with 12% interest p.a. in the name of executor of the deceased partner.

Show Partners' Capital Account and Balance Sheet of the firm as on 1.1.2016. **10**

b) Lalita for mutual accommodation draws a bill for Rs 3,000 on Sumita. Lalita discounted the bill for Rs. 2,925 and remits Rs. 975 to Sumita. On the due date Lalita is unable to remit her dues to Sumita to enable her to meet the bill. She, however, accepts a bill for Rs 3,750 which Sumita discounts for Rs 3,525. Sumita sends Rs 175 to Lalita. Lalita becomes insolvent and a dividend of 80 paisa in rupee is received from her estate.

Pass Journal Entries and show the account of Sumita in the books of Lalita. **10**

To Sundry Debtors			By Purchase Account	60,000
(Loss @ 5% on 205,400+22,600)		11,400	By Repair Account	10,000
To Partners Capital A/C:			By Prepaid Interest	24,080
J	14,660			
N	14,660			
W	14,660	43,980		
		116,680		116,680

2. Computation of Goodwill: Simple Average method

Profits of the three years

2013	Rs.180,000
2014	Rs. 200,000
2015 (Rs. 138,420+116,680) =	Rs. 255,100
Total	Rs. 635,100
Average Profits	Rs. 211,700
Goodwill (3 Years purchase) = Rs. 211,700×3	= Rs. 635,100
Goodwill to be raised (N's Share only)	= Rs. 211,700

Option B- VALUATION OF GOODWILL USING WEIGHTED AVERAGE METHOD

Partners' Capital Accounts

Particulars	J	W	N's Executor	Particulars	J	W	N's Executor
To Cash A/C	-	-	199,438.5	By Capital A/C	100,000	140,000	160,000
ToN's Executor's Loan	-	-	199,438.5	By PL Adj. A/C (WN 1)	14,660	14,660	14,660
To Balance c/d	214,379.25	254,379.25	-	By Goodwill (WN 2)	-	-	224,217
				By Cash	99,719.25	99,719.25	-
Total	**214,379.25**	**254,379.25**	**398,877**	**Total**	**214,379.25**	**254,379.25**	**398,877**

JNW & Co.

Balance Sheet

Liabilities	Amount		Assets	Amount	
Partners' Capital A/C:			Goodwill (WN)		224,217
J	214,379.25		Plant and Machinery:		
W	254,379.25	468,758.50	Given	236,500	
N's Executor 12% Loan		199,438.50	Add: Addition	60,000	
Sundry Creditors		100,000	Add: Erection	10,000	
Loan		300,000		306,500	

		Less: Revolution Loss	61,300	245,200
		Furniture		45,000
		Stock		200,000
		Debtors:		
		Given	205,400	
		Add: Wrong Credit		
		on Y's A/C of rent	22,600	
			228,000	
		Less: Written Off	11,400	216,600
		Prepaid Interest		24,080
		Bank Balance		113,100
	1,068,197			1,068,197

Working Notes:

1. Profit and Loss Adjustment Account

Particulars		Rs.	Particulars	Rs.
To Machinery (20% of Rs.306,500)		61,300	By Rent (Received from Y)	22,600
To Sundry Debtors			By Purchase Account	60,000
(Loss @ 5% on 205,400+22,600)		11,400	By Repair Account	10,000
To Partners Capital A/C:			By Prepaid Interest	24,080
J	14,660			
N	14,660			
W	14,660	43,980		
		116,680		116,680

Computation of Goodwill: Weighted Average method

Year	Profit	Weights	Product
2013	180,000	1	180,000.00
2014	200,000	2	400,000.00
2015	255,100	3	765,300.00
Total		**6**	**1,345,300.00**

Weighted Average Profit = Rs.1,345,300/6 = Rs. 224,216.67

Goodwill (3 Years purchase) = Rs. 224,216.67×3 = Rs. 672,650

Goodwill to be raised (N's Share only) = Rs. 224,216.67 eqv to Rs.242,217

Note-In the question it is specifically asked to raise the goodwill to the extent of deceased partner's share, hence shown in the Balance Sheet and not written off.

b) Journal Entries in the books of Lalita

S/N	Particulars	Dr. Amount Rs.	Cr. Amount Rs.
1	Bills Receivable A/c To Sumita (Being acceptance received from Sumita)	3,000	3,000
2	Bank A/c Discount A/c To Bills Receivable A/c (Being the amount received and discount charged on discounting of Sumita's acceptance)	2,925 75	3,000

3	Sumita A/c
	   To Bank A/c
	   To Discount A/c
	(Being amount remitted to Sumita and proportionate discount debited to her)
		1,000	975
			25

4	Sumita A/c To Bills Payable A/c (Being acceptance sent to Sumita)	3,750	3,750
5	Bank A/c Discount A/c To Sumita (Bing amount received form Sumita and proportionate discounted recorded)	175 139	314
6	Bills Payable A/c To Sumita (Being the bill having been dishonored due to bankruptcy)	3,750	3,750

7	Sumita A/c
	   To Bank A/c
	   To Deficiency A/c
	(Being the amount due to Sumita discharged by payment 80 paisa in a rupee)
		2,314	1,851
			463

NOTE: if narration is not given only 50% of allotted marks to be allowed.

Sumita's A/c

Particulars	Dr. Amount Rs.	Particulars	Cr. Amount Rs.
To Bank A/c	975	By Bills Receivable A/c	3,000
To Discount A/c	25	By Bank A/c	175
To Bills Payable A/c	3,750	By Discount A/c	139
To Bank A/c	1,851	By Bills Payable A/c	3,750
TO Deficiency A/c	463		
	7,064		**7,064**

Working Notes:
Discount charges to be borned by Lalita with reference to entry no. 5

= Rs 225/3525* (2,000+175) = Rs. 139.

3.

 a) The Machinery Account of a Factory showed a balance of Rs. 1,90,000 on 1st January, 2015. Its accounts were made up on 31st December each year and depreciation is written off at 10% p.a. under the Diminishing Balance Method.

  On 1st June 2015, a new machinery was acquired at a cost of Rs. 28,000 and installation charges incurred in erecting the machine works out to Rs. 892 on the same date. On 1st June, 2015 a machine which had cost Rs. 4,374 on 1st January 2013 was sold for Rs. 750. Another machine which had cost Rs. 437 on 1st January, 2014 was scrapped on the same date and it realized nothing.

  Write a plant and machinery account for the year 2015, allowing the same rate of depreciation as in the past calculating depreciation to the nearest multiple of a Rupee. **5**

 b) Answer the following questions: **(2×5=10)**
  i) Mention the basic considerations on the basis of which capital and revenue expenditures are distinguished from each other.
  ii) Write short notes on meaning of inventory.

Answer:

 a)

Plant and Machinery A/C

Particulars	Dr Amount Rs.	Particulars	Cr. Amount Rs.
2015		2015	
Jan 01: To Balance B/d	1,90,000	June 1: By Bank	750
June 1: To Bank (28000+892)	28,892	By Depreciation on sold machine (WN 1)	148
		By loss of sale of machine (WN 1)	2,645
		By Depreciation on scrapped machine (WN 2)	16
		By loss on scrapped machine (WN 2)	377
		December 31: By Depreciation- WN 3	20,292
		December 31: By Bal c/d (bal fig)	1,94,664
	2,18,892		**2,18,892**

Working Notes :   **Amount**
                                                                   Rs.

WN1 : Calculation of loss on sale of Machine on June 01, 2015

Cost on 1-1-2013	4,374
Less : Depreciation @ 10% on Rs. 4,374	(437)
W.D.V. on 31-12-2013	3,937
Less : Depreciation @ 10% on Rs. 3,937	(394)
W.D.V. on 31-12-2014	3,543
Less : Depreciation @ 10% on Rs. 3,543 for 5 months	(148)
	3,395
Less : Sale proceeds on 1-6-2015	(750)
Loss	2,645

WN 2: Calculation of loss on scrapped Machine on June 01, 2015

Cost on 1-1-2014	437
Less : Depreciation @ 10% on Rs. 4,374	(44)
W.D.V. on 31-12-2014	393
Less : Depreciation @ 10% on Rs. 393 for 5 months	(16)
	377
Less : Sale proceeds on 1-6-2015	-
Loss	377

WN 3: Computation of Depreciation

WDV of machines on 1.1. 2015	1,90,000
Less: WDV on 1.1. 2015 of	
Machine sold (WN1)	(3,543)
Machine scrapped (WN 2)	(393)
WDV on 1.1. 2015 of other machineries	1,86,064
Depreciation on 186,064 for 12 months @10%	18,606
Depreciation for 7 months on 28892	1,685
	20,292

b)

i) The basic considerations in distinction between capital and revenue expenditures are:

(i) **Nature of business:** For a trader dealing in furniture, purchase of furniture is revenue expenditure but for any other trade, the purchase of furniture should be treated as capital expenditure and shown in the balance sheet as asset. Therefore, the

nature of business is a very important criteria in separating an expenditure between capital and revenue.

(ii) **Recurring nature of expenditure:** If the frequency of an expense is quite often in an accounting year then it is said to be an expenditure of revenue nature while non-recurring expenditure is infrequent in nature and do not occur often in an accounting year. Monthly salary or rent is the example of revenue expenditure as they are incurred every month while purchase of assets is not the transaction done regularly therefore, classified as capital expenditure unless materiality criteria defines it as revenue expenditure.

(iii)**Purpose of expenses:** Expenses for repairs of machine may be incurred in course of normal maintenance of the asset. Such expenses are revenue in nature. On the other hand, expenditure incurred for major repair of the asset so as to increase its productive capacity is capital in nature. However, determination of the cost of maintenance and ordinary repairs which should be expensed, as opposed to a cost which ought to be capitalised, is not always simple.

(iv)**Effect on revenue generating capacity of business:** The expenses which help to generate income/revenue in the current period are revenue in nature and should be matched against the revenue earned in the current period. On the other hand, if expenditure helps to generate revenue over more than one accounting period, it is generally called capital expenditure. When expenditure on improvements and repair of a fixed asset is done, it has to be charged to Profit and Loss Account if the expected future benefits from fixed assets do not change, and it will be included in book value of fixed asset, where the expected future benefits from assets increase.

(v) **Materiality of the amount involved:** Relative proportion of the amount involved is another important consideration in distinction between revenue and capital. Even, if expenditure does not increase the productive capacity of an asset, it may be capitalized because the amount is material or expenditure may increase the asset value and yet to be expensed because the amount is immaterial.

ii) Inventories are defined in Nepal Accounting Standard (NAS) as:
Inventories are assets:

a) Held for sale in the ordinary course of business, or

b) In the process of production for such sales, or

c) In the form of materials or supplies to be consumed in the production process or in the rendering of services.

By the above definition, for the trading concern inventories encompass goods purchased and held for resale, whereas for the manufacturing concern, finished goods produced, work in progress being produced, raw materials, consumables, maintenance supplies and loose tools awaiting use in the production process consist of inventories.

Mercantile Laws
Suggested Answer

Roll No…………….   **Maximum Marks - 25**

Total No. of Questions - 2   **Total No. of Printed Pages -4**

Time Allowed - 1 Hour

Marks

Attempt all questions.

1. Answer the following questions:

   a) What are the particulars to be fulfilled in the application for registration of a partnership firm?   **5**

   b) What norms shall subject to an agreement between partners be followed in the course of settling the accounts of a Partnership Firm after its dissolution pursuant to the Nepalese Partnership Act, 2020? Discuss.   **5**

Answer:

a) An application must be submitted before the concerned department, of Government of Nepal along- with the prescribed fees in schedule 2(a) and a duly attested copy of the partnership agreement Further, following particulars need to be submitted along with application form for registration of partnership firm:-

   - Full name of partnership firm,
   - Main address of the partnership firm,
   - Brief information of the business i.e. commodities of the business which wants to deal in the service,
   - Full name and permanent address of the partners,
   - Detail of restrictions, if any, on the right of any partner,
   - Types of partner/s and capital contributed by each partner,
   - Name of partners who represent the partnership firm,
   - Certified copy of citizenship,
   - Method of sharing the profit or loss of the partnership firm,
   - Method of determining the profit or loss, of the partnership firm
   - Any other particulars directed by the concerned department of Government of Nepal ,

   b) Norms to be followed for making settlement of account between partners after the dissolution of a partnership firm is provided under section 37 of the Partnership Act, 2020. They can be discussed as below:

   In the course of settling the accounts of a partnership firm after dissolution, the following norms shall, subject to an agreement between partners and Section 32 of   Partnership Act, 2020 to be followed:

(a) Making valuation of the total property of the firm in monetary form.,

(b) Losses including deficiencies of capital shall be

i)   First out of profit

ii) Second out of partnership capital if it is not sufficient

iii) Last out of individual assets of each partner.

(c) The priority for making up the deficiencies shall be as follows:

(1) To pay the debts of the firm to the partnership third parties;

(2) To pay to each partner proportionately (*Damasahi*) what is due to him/her from the Partnership firm for the debt as distinguished from capital*;*

(3) To pay to each partner proportionately (*Damasahi)* what is due to him/her on account of capital; and

(4) The residue, if any, shall be divided among each partner in proportion to which they are entitled to share profits of partnership firm.

2. Answer the following questions:

   a) What do you mean by a quasi contract? What are the rights and duties of a finder of lost goods?   **(2+3=5)**

   b) Explain the circumstances under which a contract needs not be performed pursuant to the Contract Act, 2056.   **5**

   c) Define and point out the main features of public carrier.   **5**

Answer:

   a) A quasi contract or an indirect contract is a type of contract whereby a party becomes liable to perform some legal obligations though s/he had not entered a contract formally. The obligation is imposed by the law, but not by an agreement. Such quasi contract is performed through obligation or duty, not the right.

   The position of a finder of lost goods is similar to that of a bailee in a bailment contract and owes, in general, all the rights and duties of the bailee.
   The rights of a finder of lost goods are
   - Right to possess the goods
   - Right to sue for rewards
   - Right to lien on goods
   - Right to sell the goods, in case, the bailor does not pay the expenses within a reasonable time or in case the goods perish if not sold, or in case the expenses incurred to maintain the goods become more than one third of the value of the goods.

   The duties of a finder of lost goods are:
   - To try to find the real owner of the goods

BQX

- Not to mix the goods found with own goods
- To return the goods to the true owner
- To take reasonable care of the goods
- Not to make any unauthorized use of the goods

b) <u>Conditions of Contract need not to be performed</u>

A contract is made by the parties to do or not to do something and the obligations raised by it must be performed by them. They are bound to perform it, but it is not an absolute rule. There are some conditions under which a contract need not to be performed. Such conditions are mentioned under section 73 of Contract Act, 2056.

Following are the conditions under which contract need not to be performed

i. **Released from party**: where a party to a contract relieves/releases the other party from performing his obligations wholly or partially, a contract need not to be performed by the next party.

ii. **Voidable contract**: A contract without free consent of the party is voidable at the option of such aggrieved party. If the aggrieved party rescinds the contract through legal action, the other party is also released from performing the contract.

iii. **Breach of term of contract:** If one party to the contract breaches any terms of the contract, the other party is discharged from performing the liability of the contract and, hence, the contract need not be performed beach of the conditions of the contract by former party.

iv. **Application of any legal provision**: When a contract becomes impossible to perform due to the application of any provisions of the law in force, the contract need not be performed.

v. **Subsequent impossibility**: Where a contract becomes impossible to perform subsequently due to the changes in law or circumstances as prescribed under section 79 of the Contract Act, 2056, the contract need not be performed. The destruction of subject-matter, death or personal incapacity may be the examples of subsequent impossibility.

c) A public carrier is a person either an individual or company or a firm other than the government carrier who carries the goods of other people on a regular business of carrier for price through a fixed or customary route from one place to another place by the different means of carrier without any discrimination.

The main features of public carrier are as follows:

- It is a non-gratuitous carrier.
- An individual, a firm, or a company may be a public carrier.
- A public carrier must be ready to provide service for the people on a regular basis.

BQX

- A public carrier shall carry the goods through a fixed or customary route in proper time and place.
- A public carrier provides the service for fare without any discrimination between the consigner and consignor.
- The Government cannot be a public carrier.

Fundamentals of Economics
Suggested

Roll No…………….   **Maximum Marks - 25**

Total No. of Questions - 2   **Total No. of Printed Pages -5**

Time Allowed – 1 Hour

Marks

<div align="center">Attempt all questions.</div>

1. Long Answer Questions: **(2×5=10)**

   a) Define supply. Explain the two cases under shift in supply with the help of schedule and diagram.

   b) Introduce Nepalese agriculture. Explain its importance in economic development of Nepal.

 Answer

a)   Generally supply refers to the total quantity of the commodity available in the market for sale but in economics, total quantity is termed as stock. Supply is a part of stock which the seller is ready and able to sell at given prices and given period of time. Supply is flow concept and changes directly with change in price and other determinants.

There are so many factors affecting supply. When there is change in determinants, there will be change in supply as well. When there is change in other determinants of supply keeping price constant, it will shift the supply curve either rightwards or leftwards from its original position. It is called as shift if supply curve. There are two cases under shift in supply curve, which can be explained as following:
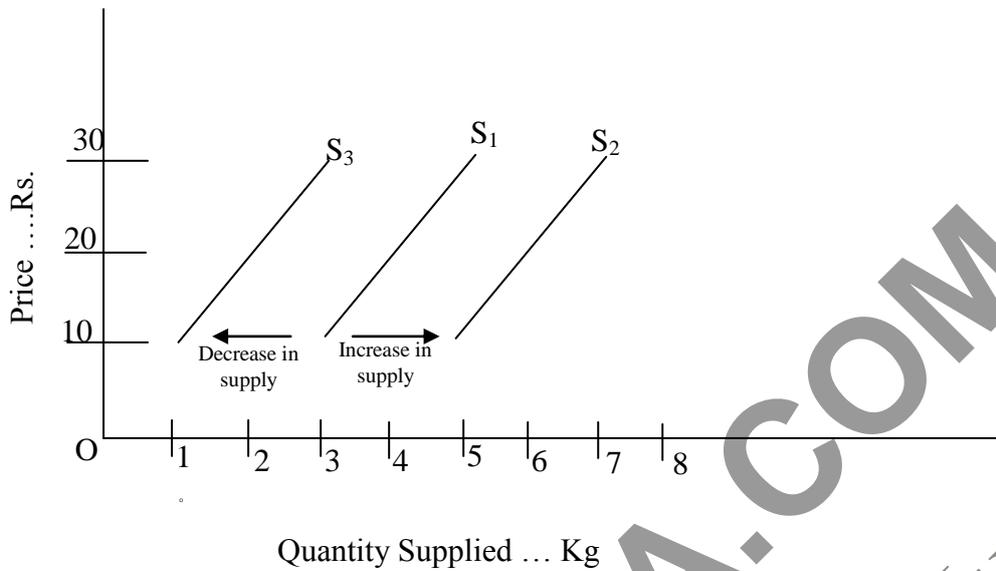
a) **Increase in supply**: When supply of the product increases due to favorable impact of determinants of supply except price of the product, it shifts supply curve rightwards from its original position. It is called as increase in supply. The main causes of increase in supply are: Technological development, availability of raw materials, infrastructure development etc.

b) **Decrease in supply**: When supply of the product decreases due to unfavorable impact of determinants of supply except price of the product, it shifts supply curve leftwards from its original position. It is called as decrease in supply. The main causes of decrease in supply are: Decrease in supply of raw materials, technological backwardness, scarcity of inputs etc.

The above stated two cases under shift in supply curve can be explained with the help of following table and diagram.

Price	Quantity Supplied at normal Situation (S_1)	Quantity supplied at favorable condition (S_2)	Quantity supplied at unfavorable condition(S_3)
Rs.10	3 Kg	5 Kg	1 Kg
Rs.20	4 Kg	6 Kg	2 Kg
Rs.30	5 Kg	7 Kg	3 Kg

<div align="center">WKZ</div>

Quantity Supplied … Kg

In the above diagram, S_1 is the initial supply curve stating various quantities supplied at various prices. When there is favorable impact on supply, quantity supplied of the product at all prices increase and supply curve shifts rightwards from its original position (from S_1 to S_2). It is called as increase in supply. Similarly, when the determinants show unfavorable impact on supply, quantity supplied of the product at all prices decrease and supply curve shifts leftwards from its original position (S_1 to S_3). It is called as decrease in supply.

b) Agriculture is the primary sector of the Nepalese economy. More than 50% people of Nepal regard agriculture as the major occupation for their survival. Major portion of Nepal's export trade depends on agriculture. Even though the contribution of agriculture sector in GDP is decreasing but agriculture is main source of survival of the country. Agriculture sector includes cash crops, food crops, horticulture and floriculture, forestry, fisheries etc.

Due to various problems like small size of land holdings, lack of irrigation facilities, absence of industrialized farming, primitive farming practice, and subsistence farming etc. productivity as well as contribution of agriculture sector in National GDP is not satisfactory despite of major portion of population involve in this sector.

The main importance of agriculture in economic development of Nepal are explained below.
1. Agriculture is the main source of industrial raw materials such as furniture, paper and paper related products, textiles, handicrafts, medicine etc. Nepal can achieve high growth through development of those sectors only.
2. Agriculture is the main basis of employment opportunities. A country can develop only by creating employment opportunities. It can not only help to increase the volume of GDP but also help to achieve growth.
3. Agriculture is the main basis of foreign trade. Most of the exportable items of Nepal are agriculture based. Export helps to earn foreign currency and increase in national income through which Nepal can shift from less developed economy to developing economy.
4. Increase in living standard of rural people. Generally, due to lack of other opportunities rural people's main source of income is from agriculture. Hence, Agriculture can help to increase living standard of rural people and balanced growth of the economy.
5. Main source of National income and sectoral development. Since, agriculture is the main occupation of majority people of Nepal. Agriculture contributes to national income and sectoral development of the economy.

From above stated points it is clear that agriculture plays very important role in development and growth of the country.

2. Short Answer Questions (Any Five): **(5×3=15)**

   a) Explain any three uses of microeconomics in business decision making.

   b) Define production function. State the difference between short run production function and long run production function.

   c) Explain any three problems of international trade.

   d) Explain any four features of perfect competition.

   e) Define monopoly. Why a monopoly firm always obtains supernormal/excess profit in long run?

   f) Define LAC. Why is it U-shaped?

Answer

a) Micro economics is a branch of economics that studies the nature, relationship and behavior of individual households and firms in making decisions on the allocation of limited resources. Microeconomics examines how these decisions and behaviors affect the supply and demand for goods and services, which determines prices, and how prices, in turn, determine the quantity supplied and quantity demanded of goods and services.

Microeconomics has enormous uses in business decision making. Main three uses of microeconomics in business decision making can be explained as following:

   1. Microeconomics can help in optimum allocation of resources: As we know the resources used in business are limited. To earn more profit by the business organization the resources should be allocated in optimum way. It can be understood from microeconomic point of view.

   2. Microeconomics helps in Pricing of product as well as factors through interaction of demand and supply. It is also another main use of microeconomics in business decision making.

   3. Microeconomics helps in increasing efficiency of factors of production. Efficiency refers to the relationship between scarce resources and output. Each business organization want to achieve efficient situation for this we need microeconomic study.

b) The functional or technical relationship between units of inputs and output is called as production function.

Mathematically,

$Q = f(L_d, L, K, O)$

Where, Q = output produced

L_d = Land L = Labor K = Capital O = Organization

In economics, short run refers to the time period in which only variable factors can be changed keeping fixed factors as constant. Short run production function can be defined as the functional relationship between quantity of output produced and units of variable factors used in production process.

Mathematically, $Q = f(Nvf)$

Where, Q = Output Nvf = number of variable factors of production.

In short run, the producer can only change one factor keeping others as constant therefore short run production function can also be termed as single variable production function. Law of variable proportions is the example of short run production function.

Long run is that time period in which all the factors are variable. Long run production function can be defined as the functional relationship between quantity of output produced and units of all inputs used in production process. Since, it reveals the composite effect of all the inputs to output it is also

called as multi-variable production function. The law of returns to scale, Cobb-Douglas production function etc. are the examples of long run production function.

Mathematically, $Q = f(L_d, L, K, O)$ or $Q = f(L,K)$

Where,   Q= Output L_d= land   L= Labor   K= Capital, O=Organization

c)   The main Problems of international trade are as follows

1.**Geographical Location:** Nepal is a land locked country surrounded by India in three sides and by China in one side i.e., north. Due to over dependence on India Nepal's foreign trade is hindered. It is very difficult to trade freely with overseas countries.

2.**Concentrated on limited goods:** Nepal's export is limited only to on few goods. The main items of Nepal's are primary products while the imports are finished goods and machineries. This results to the increase in imports and decrease in exports. Nowadays Nepal's main items are carpets and exports readymade garments. Their exports are also in declining trend.

3.**Low quality goods:** The goods produced in Nepal are of inferior quality. There are complaints that even the quality of carpets and garments are deteriorating. The goods produced also involve high cost. Thus, Nepalese products of low quality involving high cost cannot compete in international market with foreign products.

d)   Perfect competition is a form of market in which there will be large number of buyers and sellers. The product of the different producer will be homogenous. A firm can't affect the price by its individual efforts. A perfect competition market is characterized by the following features:

1.**Large numbers of buyers and sellers**:- The first condition of perfect competition is large number of buyers and sellers. The market must have such a large number of sellers that no seller is able to dominate in market. Similarly, there should be large number of buyers.

2.**Homogenous Product**:- under this market the firms or sellers must sell homogenous goods. There shouldn't be any differentiation of products in quality, variety, colour, design, packing or other selling conditions of the product.

3.**Free entry and exist for firms**:- Under perfect competition there is absolutely no restriction on the entry of new firms in the industry or the exit of the firms in the industry who want to leave it.

4.**Perfect mobility of factors of production**:- All factors of production should freely move from one firm to another. If labour of the same type moves from a low paid occupation to a highly paid occupation, the price of labour i.e. the wage rate will be similar in all the occupation or firms.

5.**Perfect knowledge**:- Another condition of perfect competition is that both sellers and buyers must have perfect knowledge about the market conditions. Seller must know the prices of the commodity, which is prevailing in the market similarly the buyers must know the price being charged by different sellers.

6.**Absence of transportation cost**:- Price of the product should not be affected by the cost of transportation cost. In other words, the market price charged by sellers should not be different due to the presence of transportation cost.

e)   Monopoly is a type of market Structure in which single seller and large number of buyers are dealing with the product which has no substitutes. There is restriction/barriers to entry of new firms in the industry without government regulation.

The main characteristics of monopoly market are as follows:

1. Single seller large number of buyers
2. No close substitutes
3. Barriers to entry of new firms
4. Firm is same as industry
5. Firm itself is price maker
6. Negatively sloped demand curve etc.

The firm operating in monopoly market always obtains excess profit in long run due to the following reasons.

a) Monopoly firm has sufficient time to replace all the inefficient factors of production in long run by efficient ones which creates favorable condition to obtain profit.

b) Since, there are barriers to entry of new firms industries. There is no fear of competition being the firm as single in the market.

The firm itself is price maker. So, the firm determines the price in such a way that it could earn excess profit.

f) LAC is a locus representing minimum cost points of the plants that can be operated in shortrun. It means LAC is derived by joining various minimum SACs of producing various levels of output. It is called tangent curve, envelope curve, planning curve and so on. It is less pronounced than SACs, because the firm will have better chance of getting profit with change of factors of production.
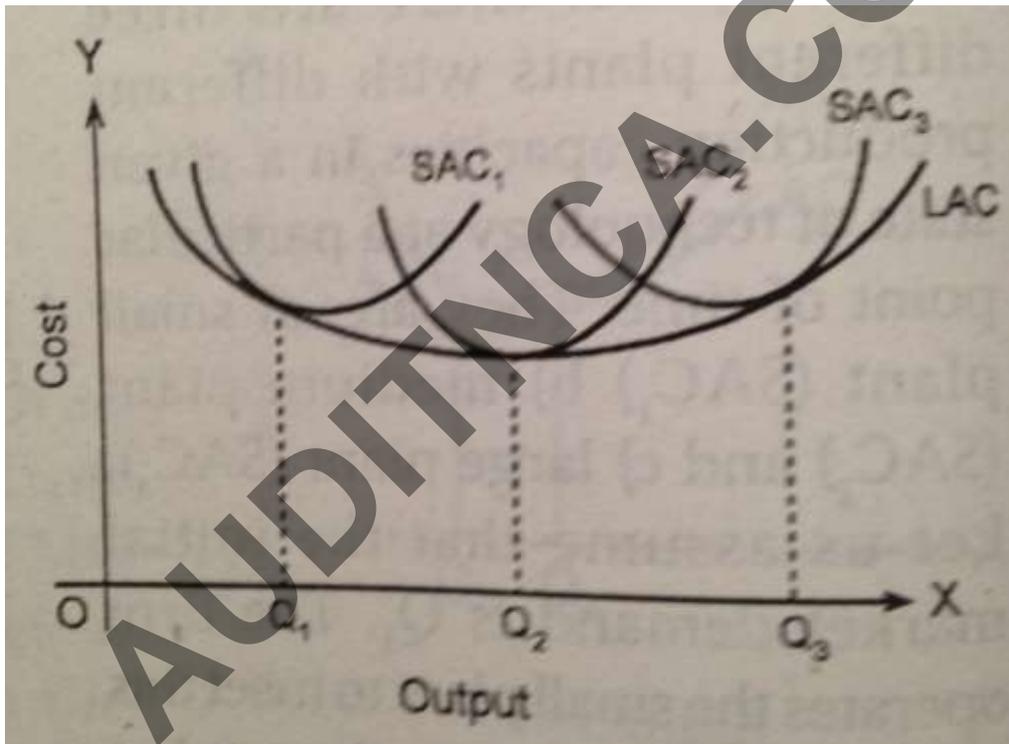
Due to the application of laws of returns to scale in longrun production function and presence of economies and diseconomies of scale, LAC is U- shaped.
When IRS operates, LAC falls, when DRS operates LAC rise and when CRS operates, LAC reaches at its minimum and constant.

Commercial Mathematics & Statistics
Suggested

Roll No........................   **Maximum Marks - 25**

Total No. of Questions - 2   **Total No. of Printed Pages -4**

Time Allowed - 1 Hour   **Marks**
Attempt all questions.

1.

(4×4=16)

a) From the data given below, calculate the trend values and estimate the price for the year 2016.

Year	2009	2010	2011	2012	2013	2014	2015
Price	13	17	15	22	26	23	28

What is the monthly increase in the price?

b) In an observation 10 measurements were taken on two related variables X and Y and analyzed. The following results obtained $\sum X$ =320, $\sum Y$=380, $\sum XY$=12067, $\sum X^2$=10380. Using regression equation estimate the value of Y for X= 30.

c) The value of a machine which was purchased 2 years ago, depreciates on diminishing balance at 12% per annum. If its present value is Rs. 96,800 for how much was it purchased?

d) Compute Bowley's price index number from the following data:

A	1	6	5	8
B	2	7	4	7
C	3	8	3	6
D	4	9	2	5

Answer

a)   L

et Year = t, price = Y and X = t-2012

t	X	Y	XY	X²	Trend values
2009	-3	13	-39	9	13.28
2010	-2	17	-34	4	15.71
2011	-1	15	-15	1	18.14
2012	0	22	0	0	20.57
2013	1	26	26	1	23
2014	2	23	46	4	25.43
2015	3	28	84	9	27.86
Total	0	144	68	28	

Here ∑X = 0,

Therefore, $b = \dfrac{\sum XY}{\sum X^2} = \dfrac{68}{28} = 2.43$ and $a = \bar{Y} = \dfrac{\sum Y}{N} = \dfrac{144}{7} = 20.57$

Trend line is $\hat{Y}$= a + b X i. e. $\hat{Y}$ = **20.57 + 2.43 X**
Trend values are
$\hat{Y}_{2009}$ = 20.57+2.43×(-3) = 13.28
Y'(2010) = 20.57+2.43×(-2) = 15.71and so on.

Estimated price for the year 2016 (i.e. X=4) = 20.57+2.43×(4) = 30.29
Here b is yearly increment
Monthly increment = Yearly increment /12 = b/12 = 2.43/12 = 0.2025

b) Here,

$$n = 10 \ , \ \sum X = 320 \ , \ \sum Y = 380, \ \sum XY = 12067 \ \sum X^2 = 10380$$

$$\bar{X} = \frac{\sum X}{n} = \frac{320}{10} = 32$$

$$\bar{Y} = \frac{\sum Y}{n} = \frac{380}{10} = 38$$

Regression equation of Y on X is

$$Y - \bar{Y} = b_{YX}(X - \bar{X})$$

Where $b_{YX} = \dfrac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$

$$= \frac{10 \times 12067 - 320 \times 380}{10 \times 10380 - (320)^2}$$

$$= \frac{-930}{1400}$$

$$= -0.66$$

Now, regression equation of Y on X is

Y- 38 = - 0.66 (X- 32)

or, Y = - 0.66X + 59.12

when X = 30

Y= -0.66× 30 + 59.12

or, Y= 39.32

c) Scrap Value (S) = Rs 96,800

Time (n) = 2 years

Rate (R) = 12%

Original Value (v) = ?

We know,

$$S = V\left(1 - \frac{r}{100}\right)^n$$

$$96,800 = V\left(1 - \frac{12}{100}\right)^2$$

$$\therefore V = Rs\,125,000$$

d) Computation table

	p_0	q_0	p_1	q_1	$p_1 q_0$	$p_0 q_0$	$p_1 q_1$	$p_0 q_1$
A	1	6	5	8	30	6	40	8
B	2	7	4	7	28	14	28	14
C	3	8	3	6	24	24	18	18
D	4	9	2	5	18	36	10	20
					$\sum p_1 q_0 = 100$	$\sum p_0 q_0 = 80$	$\sum p_1 q_1 = 96$	$\sum p_0 q_1 = 60$

Bowley's price index number

[2]

$$= \frac{1}{2}\left[\frac{\sum p_1 q_0}{\sum p_0 q_0} + \frac{\sum p_1 q_1}{\sum p_0 q_1}\right] \times 100$$

$$= \frac{1}{2}\left[\frac{100}{80} + \frac{96}{60}\right] \times 100$$

$$= 142.5$$

2.

(3×3=9)

a) The following data gives evaluation score (out of 100 full marks) in two subjects performance and morale of ten government employees of a certain office:

Score in performance	80	85	88	89	92	93	92	95	98	97
Score in morale	75	68	70	73	88	80	87	90	92	88

Calculate the coefficient of correlation using Spearman's rank method.

b) A person buys a house for which he agrees to pay Rs. 1,000,000 and Rs. 5,000 at the end of each month for 8 years. If the interest is 12% p.a. compounded monthly, what is the cash price of the house?

c) In how many different ways can the letters of the word 'CENTRIFUGAL' be arranged so that the vowels always come together?

Answer

a) Let X=Score in performance and Y=Score in morale

And R_1=Rank in performance and R_2=Rank in morale

X	Y	R_1	R_2	d=R_1-R_2	d^2
80	75	10	7	3	9
85	68	9	10	-1	1
88	70	8	9	-1	1
89	73	7	8	-1	1
92	88	5.5	3.5	2	4
93	80	4	6	-2	4
92	87	5.5	5	0.5	0.25
95	90	3	2	1	1
98	92	1	1	0	0
97	88	2	3.5	-1.5	2.25
				$\sum d^2$=23.5	

In R_1 rank 5.5 has repeated 2 times and in R_2 rank 3.5 has repeated 2 times, m_1=2 and m_2=2

Correction factor for first repeated case= $m_1(m_1^2 - 1)/12 = 2(2^2 - 1)/12 = 0.5$

Correction factor for second repeated case= $m_2(m_2^2 - 1)/12 = 2(2^2 - 1)/12 = 0.5$

Rank correlation coefficient= $1 - \dfrac{6\left[\sum d^2 + m_1(m_1^2 - 1)/12 + m_2(m_2^2 - 1)/12\right]}{N^3 - N}$

$= 1 - \dfrac{6[23.5 + .5 + .5]}{10^3 - 10} = 1 - \dfrac{147}{990} = 0.8515$

b) Cash payment=Rs.1000000

P=Rs 5000

n=8×12=96

r=12% p.a

$= \frac{12}{12}$%p.month

=1% per month

i=$\frac{r}{100}$ =1/100 =0.01

Present value of immediate annuity=?

Present value of immediate annuity $= \frac{p}{i}[1-\frac{1}{(1+i)^n}]$

$$= \frac{5000}{0.01}[1-\frac{1}{(1+0.01)^{96}}]$$

$$= 500000[1-\frac{1}{(1.01)^{96}}]$$

$$= 500000(1-\frac{1}{2.599})$$

$$= 500000(1-0.385)$$

$$= 307500 \text{ (approximate)}$$

Hence cash price of house = Rs. (1000000+ 307500)

$$= Rs. 1307500 \text{(approximate)}$$

c)   In the word 'CENTRIFUGAL', we treat the vowels EIUA as one letter.

Thus, we have CNTRFGL (EIUA).

This has 8 (7 + 1) letters.

Number of ways of arranging these letters = 8! = 40320

Now, 4 vowels can be arranged in 4! or 24 ways

$\therefore$ Required number of ways $= 8! \times 4! = 40320 \times 24 = 967680$

Fundamentals of Management
Suggested Answer

Roll No…………….   **Maximum Marks - 25**

Total No. of Questions - 2   **Total No. of Printed Pages -4**

Time Allowed – 1 Hour

Marks

Attempt all questions.

3. Long Answer Questions: **(2×5=10)**

   a) Discuss about the steps of rational decision making process in brief.

   b) Summarize the concept and components of human resource management.

Answer:

   a) Rational decision can be defined as a systematic process in defining problems, evaluating decision alternatives and selecting the best alternative decisions available as follows;

   i. Defining Problems:

   The first step in rational decision making is to identify the problem. At this stage, a manager needs to identify the problems faced, the source of the problems and how to resolve them. For example, your office is facing delayed work problems. When analyses, it is found that the problems originates from shortage of computers in the office. Therefore, the management agrees to purchase more computers for office use.

   ii. Identifying the Decision Criteria:

   After identifying the problems, the next step in rational decision-making is to establish the decision criteria. The decision criteria refer to the standards or features that will be taken into consideration when making a decision. Referring to the above example, since the management had decided to purchase new computers, then what are the criteria that will be taken into consideration when selecting the new computers? Based on the aspects of pricing, quality, compatibility with the other equipment and warranty, that is the after sales guarantee. These factors of price, quality, compatibility and warranty are the factors in decision criteria.

   iii. Allocating Weights to Each Criteria:

   After identifying the criteria that needs to be taken into consideration when making decision, the next step will be to allocate weights to each of the criteria by comparing criteria directly each other. That helps to identify which are the most important criteria, the second important criteria and thereafter the next lesser important criteria for the decision maker. Meaning to say, decision criteria are arranged according to priorities. The priorities of an individual might be different from another individual. Based on the example given above, you might place the quality factor as the most important, followed by compatibility factor, pricing factor and lastly the warranty factor.

   iv. Generating Alternatives Solutions:

WKZ

Once you have identified and allocated weights to the criteria decision, the next step is to develop as many alternative solutions as possible. The more alternatives generated, the better the process. Based on the examples above, in order to purchase a new computer, the alternatives that can be taken into consideration will be Acer, IBM, NEC, Serindit, Compaq and others.

v. Evaluating Alternatives:

At this level, every alternative will be compared with each decision criteria. This is to determine the extent of the alternatives to fulfil the decision criteria that had been set. Usually, this level takes the longest time as there is a lot of information that must be collected first before comparisons can be made. It also involves the use of a huge sum of money. This means, all the alternative solutions, which are Acer, IBM, NEC, Serindit and Compaq, will be evaluated from the aspects of quality, compatibility, pricing and warranty (decision criteria). The more decision criteria that are fulfilled by an alternative, the better the alternative will be.

vi. Selecting the Optimal Decision:

The last step in the process of making rational decision is to select the best alternative solution available. The best alternative is the alternative that fulfils all the decision criteria according to the importance that has been arranged. However, if there are no alternative that could fulfill all the decision criteria according to the arrangement set, then the alternatives that fulfill the most of the top criteria will be selected.

b) Human resource management is concerned with human element in organization. Organizations employ people to work for getting success of their purposive establishment. Properly managed people help to increase productivity through their full commitment and capability. So human resource management is one of the key elements in management and coordination of work and people in organization.

The concept of human resource management encompasses people as the most valuable resource. It is an improved version of the personnel management that encompasses the functions like recruitment, selection, training, performance evaluation and emphasizes the integration of strategic and operational activities to achieve the desired results. It is defined as the set of organizational activities directed at attracting, developing and maintaining an effective workforce.

Components of human resource management consist of acquisition, development, utilization and maintenance. Acquisition ensures the entry of right people through human resource planning, job analysis, recruitment, selection, placement and socialization. Development ensures proper competencies of employees to handle jobs assessing development need followed by employee training and career development. Utilization is concerned with improving productivity by motivation, performance appraisal and reward management. Maintenance consists employee discipline, grievance handling and welfare.

4. Short Answer Questions (Any Five): **(5×3=15)**

   a) Nature of organization
   b) Non-programmed decision
   c) Decentralization of authority
   d) Methods of planning

e) Democratic leadership style
f) Matrix organization

Answer:

a) **Nature of organization**

Organization is defined as a system composed of people, structure and technology for achieving common goals in a dynamic environment. The nature of organization consists goal-orientation, collection of people, structure, technology, continuity and environment.

Goals provide reason for existence of organization and bind its members together. Goals might be profit, service or welfare, which give direction to action of organization. People perform variety of activities to achieve goals interacting and working together. Structure defines their formal relationships and positions in the organization with differentiation of activities and integration of efforts. Represented by equipment, techniques and skills, people use technology to perform activities. Organization adapt to changing environment to survive taking care of its continuity element. Continuity provides stability to the organization.

b) **Non-programmed decision**

Non-programmed decision are unique and non repetitive. If a problem has not arisen before or if there is no clear cut method for handling it then it must be handled by a non-programmed decision. It becomes necessary due to certain unexpected and unprecedented situations. It is a complex decision and hence requires a creative process of problem solving which is specifically tailored to meet the requirements of the situation. There are no any guidelines to follow or past data to refer and manager needs to collect a lot of information before he takes the decision. The example of non-programmed decision is whether to merge with other organizations, diversify, open a new branch in a foreign country etc.

Non-programmed decisions are taken by managers confronting emergency situations, in consultations with higher level of management.

In non-programmed decisions each manager may use his own judgments, intuition and beliefs to bear on the decision process. It is possible for two managers to reach distinctly different solutions to the same problem, each claiming that he is acting rationally. There is no consistency.

c) **Decentralization of authority**

Every organization has to decide how much authority should be centralized into the hands of top executive and how much should be distributed among the managers at lower levels. In decentralized organization, the decision making authority is delegated to the lowest level. In decentralized organization, the role of subordinates increases.

Decentralization of authority is the systematic and consistent delegation of authority to the lowest level where the work is performed. It is the philosophy of the top management of an enterprise under which maximum authority is distributed among middle and lower level managers. The management keeps minimum authority.

No doubt the decentralization permits quicker and better decision making-decision, but there cannot be absolute decentralization of authority because the manager cannot delegate all his authority without surrendering his position of a manager.

d) **Methods of planning**

Planning is looking ahead in a systematic way. Planning helps managers to focus on goals. Planning ensures commitment of managers and employees to goals and courses of actions. The methods of planning are top-down, bottom-up, participative and team.

Top-down method of planning assumes that top management possesses knowledge, skills and authority for planning. It is generally used in highly centralized organization. Middle and lower level managers drive bottom-up method of planning. It is decentralized approach and those responsible for implementation are involved in planning. Participative method of planning is a blend of both. Here the top management provides broad parameters and guidelines and the middle and lower level management formulates the plans. Such plans are forwarded to top management for review and approval. The team method of planning entrust to a work team for planning. The team members can be line managers and staff experts who function as a unit.

e) **Democratic leadership style**

In this type of leadership, the subordinates are consulted and their feedback is taken into consideration while making decision. The leader's job is basically of a moderator, even though he makes the final decision and he alone is responsible for the results. Hence the group is not dependent upon him as an individual and can function effectively in his absence. Subordinates have considerable freedom of action. The leader shows greater concern for the people than for high production.

The leader consistently receives the best information, ideas, suggestions and talent of his people. This style is suitable, when subordinates are performing repetitive tasks involving their ego. By involving them into the decision making process, their ego will get satisfied and their support is easily assured.
But some leaders may use it as a way of avoiding responsibility.

f) **Matrix organization**

Matrix organization is also known as the project organization, grid organization or multiple command system. In matrix structure, managers group people and responsibilities in two ways simultaneously; by function and by product or work project. This is the modern type of structure and is suitable in the solution of fast changing activities. Employees are grouped into functions to allow them to learn from another and become more skilled and productive. In addition, employees are grouped into project teams, teams in which members of different function work together to develop a specific product. There is a complex network of reporting relationships among product teams and functions. This structure violates the rule of the unity of command so why are complicated to manage. The project managers may obtain expertise from all specialist and experts working in the organization as when needed.