

Registration No :

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Total Number of Pages : 02

Course: MBA
Sub_Code: 18MBA101

1ST Semester Regular/Back Examination: 2022-23

SUBJECT: Managerial Economics

BRANCH(S): BA,BM,FM,FM&HRM,GM,HRM,IB,LSCM,MBA,MBA (A & M),
MBA (M & F),MM,RM

Time : 3 Hour

Max Marks: 100

Q.Code: L596

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions : (2 x 10)

- State the meaning of economies of scale.
- Give example to explain Giffen paradox.
- Differentiate between a normal good and an inferior good?
- What is opportunity cost?
- Write two cases where of demand curve slopes upward.
- Define law of diminishing returns.
- What is cross elasticity of demand?
- What is monopolistic competition?
- What do you mean by the term Price discrimination?
- What do you mean by the term „recession“?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Define managerial economics with the help of an example. Discuss how it is different from traditional economics?
- Discuss the factors that determine demand of ice-cream in Indian market.
- How demand of consumer durable goods can be forecasted?
- Discuss about Income elasticity of demand with the help of examples.
- Ravi buys 10 smart phones at a price of Rs. 6500 per unit. The price elasticity of demand is 2. At what price will he be willing to buy 150 units of smart phones?
- Discuss the law of variable proportions.
- Discuss the law of returns to scale.
- Define duopoly market and discuss its features.
- Distinguish between balance of trade and of balance of payment
- Differentiate between Gross Domestic Product and Net National Product?
- Discuss the phases of business / trade cycle.
- What is production function? Discuss the law of production in short-run.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** What is cost function? What are different types of cost function? (16)
- Q4** Show how a monopoly firm reaches its equilibrium in the short run with the help of MR and MC curves. (16)
- Q5** What are the factors that influence the pricing policy? Discuss the major pricing strategies adopted by firms in India. (16)
- Q6** Mention the major advantages of Monetary Policy (MP) over Fiscal Policy (FP). What are the instruments of Fiscal Policy. (16)

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Total Number of Pages : 02

Course: MBA
Sub Code: 18MBA109

1st Semester Regular/Back Examination: 2022-23

Business Environment & Ethics

BRANCH(S): BA,BM,FM,FM&HRM,GM,HRM,IB,LSCM,MBA,MBA
(A & M),MBA (M & F),MM,RM

Time: 3 Hours

Max Marks: 100

Q.Code: L683

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions :

(2 x 10)

- Write a short note on biodegradable waste.
- What do you mean by PESTLE analysis?
- What do you mean by liberalisation?
- Macro environment is complex and dynamic. Comment.
- Who are the market intermediaries?
- What is a technological disruption?
- What is the role of social norms?
- Why ethics is important in business?
- What do you mean by value system?
- How man made calamity can be best described?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- How top management can ensure ethical practices in entire organization?
- Discuss the importance of industrial waste management.
- Ethics helps in sustainable reputation and return for any business. Comment.
- What are the steps for management of urban pollutants?
- How global environment impact all business enterprises?
- What are the credentials of ethical leadership?
- Distinguish ETOP analysis from SWOT analysis with example.
- How the trends and patterns in the society influence business decision?
- What are the government regulations impact different industries?
- Environmental scanning is the foremost step of undertaking any business. Comment.
- How different culture and ethnicity affect the HR decisions in a multinational firm?
- Personnel department should endure ethics in policies and practice. Comment.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** What are the internal and external determinants of business ethics? How corporate culture manifested in ethical behaviour of employees at workplace? **(16)**
- Q4** Discuss the significance of business environment. How different dimensions of business environment determine the organizational success? **(16)**
- Q5** Critically examine the role of New Economic Policy on industrial growth and development in India. **(16)**
- Q6** Elucidate the challenges encountered by natural and manmade disasters. Discuss the measures to minimize the effect of these disasters. **(16)**

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Course: MBA
Sub Code: 18MBA102

1st Semester Regular/Back Examination: 2022-23

SUBJECT Marketing Management

BRANCH(S): BA, BM, FM, FM&HRM, GM, HRM, IB, LSCM, MBA, MBA (A & M),
MBA (M & F), MM, RM

Time : 3 Hour

Max Marks : 100

Q.Code : L612

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions :

(2 x 10)

- What are the 4 Ps of marketing?
- Define Consumerism.
- What do you mean by product length and product width?
- Define societal marketing.
- What is marketing myopia?
- What do you mean by franchising?
- Define Guerrilla marketing.
- Differentiate between a consumer and a customer.
- What are the elements of promotional mix?
- What do you mean by digital marketing?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- What is the labelling of a product? What are the purposes of labelling a product?
- Explain the importance of pricing in marketing mix. What are the determinants in pricing a product?
- "The present day market is consumer oriented" Explain with the help of an Indian example.
- What are the different stages of consumer buying behaviour?
- Describe five macro-environmental elements and how they affect a marketing manager's decisions.
- How does packaging play a role in marketing?
- Define Market Segmentation. What are the different bases of Segmenting a Market?
- Discuss the Consumer Adoption Process.
- What is positioning? Explain various product differentiation strategies that can be used for positioning.
- Compare between organizational buying behaviour and consumer buying behaviour

- k) Define marketing concept. How it is different from selling concept and product concept?
- l) What are the factors that are taken into consideration by a company before selection its distribution channel?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3 a) Explain the PLC concept with self explanatory diagram by taking example of any consumer product. (8x2)
- b) Discuss how the marketing mix strategy would vary between different stages of PLC.
- Q4 a) What are the steps involved in a new product launch? Discuss with the help of a suitable example. (8x2)
- b) How do you select the right target market for your new product?
- Q5 a) Why do conflicts occur in a distribution system? Is it possible to eliminate all types of conflicts in a channel relationship? (8x2)
- b) Explain different types of channel conflict, their causes and resolution mechanism.
- Q6 a) What factor effects price sensitivity and influence the pricing strategy of a firm? (8x2)
- b) Explain various pricing strategies adopted by a firm.

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Total Number of Pages : 02

Course: MBA
Sub_Code: 18MBA108

1st Semester Regular/Back Examination: 2022-23

BUSINESS LAW

**BRANCH(S): BA, BM, FM, FM&HRM, GM, HRM, IB, LSCM, MBA, MBA (A & M),
MBA (M & F), MM, RM**

Time : 3 Hour

Max Marks : 100

Q.Code : L671

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions :

(2 x 10)

- a) A sends a parcel of mangoes to his friend B, the parcel is misdelivered to C who takes it as a birthday gift and consumes it. Discuss the rights and obligations of A, B and C.
- b) A shop keeper displays goods for sale in a shop with a price list attached to each of them. What kind of offer is it? What are the rights and obligations of the shopkeeper and the prospective buyer?
- c) X says during conversation with Y that he will give Rs10,00,000 to a person who marries his daughter. Z marries X's daughter and files a case against X claiming the payment of the sum to him. Will he succeed?
- d) A offers to pay such remuneration as may be deemed right. Examine the validity of this offer X, a minor obtains loan from Y by falsely representing his age. Can Y recover the loan from X?
- e) X saves Y's property from the fire intending to do so gratuitously. Subsequently, he claims compensation from Y on the ground that Y enjoyed the benefit of X's act. Can X succeed?
- f) A hired B's convention hall for a series of lectures. B discovered that the lectures would be of seditious nature and refused to allow A to use the hall. A sued B. Advise B.
- g) A ship mate was engaged for a lump sum of Rs1.00 lakh to be paid after the voyage. The mate dies before the journey could be completed. His son claimed damages on quantum meruit. Is the owner of ship liable to pay?
- h) A lends his bike to B for Rs500 per day for 3 days. He did not know the defect in the bike. B has a fall and is injured. B sues A for damages. Is A liable to pay?
- i) A asks B to sell his cycle in the market. A directs B not to sell it below Rs1000 and in any case not to C. But B disregards the instructions and sells at Rs800 and to C. What are the rights of A against B and C?
- j) A promises to obtain for B an employment as Accountant in a government company and B promises to pay Rs1.00 lakhs. B paid Rs 50,000 in first installment. In an open interview, he got selected. A demands for balance payment. But B refuses to pay, rather wants his cash back. Discuss the rights and obligations of A and B.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 × 8)

- a) What do you mean by 'supervening impossibility'? What are the grounds to reject the claim for benefit under this principle? Explain.
- b) In which context we use the term 'quid-pro-quo' and the absence of which renders the agreement invalid? Discuss the rules concerning this and write 3 exceptions.
- c) What is the context of using the phrase 'nemo-dat-quo non-habet'? Explain its exceptions.
- d) What do you mean by quasi contract? What are the basic principles behind quasi contract? Write down its rules for claiming enforcement of the right.
- e) Distinguish between private limited company and public limited company.
- f) Define a bailment contract. Write the rights of bailor and bailee against each other.
- g) Discuss the rights of an aggrieved party in case of breach of contract.
- h) Describe the rules regarding offer and acceptance.
- i) Explain the different kinds of damages one can claim from the other party.
- j) 'Risk follows the owner'. Explain this statement. Discuss the provisions regarding this quote.
- k) Discuss the meaning of 'deficiency in service' and 'defects in goods'. Explain the terms citing any case law you know about both.
- l) Discuss the provisions regarding the implied conditions under sale.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** Discuss the 9 essential elements of a valid contract. Can a valid contract be declared invalid by Government? If yes, when? **(16)**
- Q4** Define a company. What are the features of a company? Explain **(16)**
- Q5** Discuss the powers of the consumer grievance redressal machineries. **(16)**
- Q6** Define an unpaid seller. Discuss the powers of an unpaid seller against goods and against the person. **(16)**

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Total Number of Pages : 02

MBA
18MBA107

1ST Semester Regular/Back Examination: 2022-23

FINANCIAL ACCOUNTING AND ANALYSIS

BRANCH(S): BA, BM, FM, FM&HRM, GM, HRM, IB, LSCM, MBA, MBA (A & M),
MBA (M & F), MM, RM

Time : 3 Hour

Max Marks : 100

Q.Code : L653

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions :

(2 x 10)

- What does the term GAAP mean? Identify 5 institutions that influence Indian GAAP.
- In the event of insolvency of a company, what is the liability of a shareholder for the company's debts?
- Give 5 examples of economic decisions that are based on accounting information.
- During January, RRR Co Ltd sells goods for Rs13,000 to a customer and receives immediately a cheque for Rs4000 as part payment from the customer. How will this transaction affect the company's profit and loss account, balance sheet, and statement of cash flows?
- What is the meaning of a debit balance or a credit balance? Is a debit balance favourable and credit balance unfavourable?
- What is the normal balance of debtor's account? When can it have an abnormal balance?
- Western Tours provide conducted tours to Jaipur, Agra, and Delhi. It receives full payments from its customers in advance. Can the amounts be treated as revenue immediately?
- In India, purchase discounts are deducted from purchase price, whereas sales discounts are not deducted from sales price. Why?
- JK Ltd had a gross profit margin of 40% on sales. Calculate the company's net sales if the cost of goods sold was Rs180,000.
- Cash forms a small part of the assets of most organizations. Why then is control over cash regarded as highly important?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Explain how consistency principle improves the usefulness of financial statements.
- Interest costs on debt incurred for financing an asset can be charged to the asset account. Do you agree? Explain
- When can the use of accelerated methods of depreciation be justified?
- Why is it important to distinguish between current liabilities and long term liabilities? Give examples to explain this.
- Samir co Ltd has 10,000 shares of Rs10 each and balance of Rs50,000 in the share premium account. The company decides to buy back 200 shares at Rs25. Pass the journal entries to pay the shareholders.
- How is financial statement analysis useful to investors and creditors?

- g) Do you think comparisons with industry standards are better than comparisons with a company's past? Why?
- h) Identify three financial ratios on which the management of a retail store should focus? Why?
- i) From the statement of cash flows, how can it be ascertained whether short term funds have been used for long term purposes?
- j) Why is the statement of cash flows considered necessary in addition to the profit and loss account and balance sheet?
- k) How are cash flows classified in the statement of cash flows? Give some examples for each category.
- l) What are subsidiary books? Why should a business house maintain subsidiary books?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** Why is accounting called the language of business? Briefly discuss the usefulness of accounting information for different stakeholders? **(16)**
- Q4** Why should accounting standards be followed? Explain five accounting standards. **(16)**
- Q5** From the Trial Balance given below and additional information prepare a Trading, Profit and Loss Account and Balance Sheet of SKS Ltd for the year ended 2021-22 **(16)**

Sl. No.	Accounts	Debit (Rs.)	Credit (Rs.)
1.	Capital		1,00,000
2.	Sundry Debtors	22,000	
3.	Sundry Creditors		17,000
4.	Purchases	55,000	
5.	Sales		97,000
6.	Plant and Machinery	20,000	
7.	Furniture and Fixtures	22,000	
8.	Land and Building	50,000	
9.	Sales Return	500	
10.	Purchase Return		1,000
11.	Carriage Inward	1,000	
12.	Carriage Outward	1,500	
13.	Wages	1,800	
14.	Rent	1,500	
15.	Salary	15,000	
16.	Advertisement Expenses	4,200	
17.	Interest received		2,000
18.	Sale of Old newspaper		500
19.	Opening Stock	18,000	
20.	Cash in hand and Bank	5,000	
	TOTAL	2,17,500	2,17,500
Additional Information:			
a. Closing Stock Rs 4,000			
b. Wages unpaid Rs 200			
c. Charge depreciation at 10% on Land and Building.			

- Q6**
- a. Explain the advantages and limitations of cash flow statement
 - b. Explain why should the firms prepare short term and long term solvency ratios?
- (16)**

Registration No :

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Course: MBA
Sub_Code: 18MBA106

1st Semester Regular/ Back Examination: 2022-23

SUBJECT: Business Communication

BRANCH(S): BA,BM,FM,FM&HRM,GM,HRM,IB,LSCM,MBA,MBA (A & M),MBA (M & F),MM,RM

Time : 3 Hour

Max Marks : 100

Q.Code : L650

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions :

(2 x 10)

- Define two-way communication process.
- What is grapevine communication? Give examples.
- Correct the sentences:
 - She is working in an university in the London.
 - The manager has joined the office yesterday on 10 AM.
- Write any two email etiquette to be followed by a manager.
- Distinguish between skimming reading and scanning reading.
- What is an oral report? Give one merit and a demerit of oral reporting.
- What is Oculesics? Why is it important in retail management?
- Use appropriate modal in the following sentences:
 - _____ I borrow your bike please? (permission)
 - You _____ not consume alcohol. (Advice)
- Differentiate between GD and a Debate.
- What is active listening? Give an example.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- What are the essentials of a presentation? Explain.
- Give an account of the types of non-verbal communication you consider to be important for a manager.
- What are the formal channels of communication? Elaborate with examples.
- You are the owner of a furniture company. Write a sales letter to a potential customer about your products.
- Your organisation wants to contribute to the CM's relief fund. Write a memo to all the employees persuading them to contribute their one-day salary for this good cause.
- Why are speaking skills important? Explain with examples.
- Communication Technology (like email, video conferencing etc.) helps communicating faster. Explain.
- What are the features of a good report? Elaborate.

Functional
Chronological

- i) You are the factory manager of ARS Ltd. You have witnessed improper use of mobile phones in the factory by employees. Write a notice informing all your employees about mobile etiquette.
- j) What is Resume? What are its types? Give examples.
- k) What is the importance of feedback in communication? Explain.
- l) What is paralanguage? What is its importance in public speaking?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3) What are the barriers to communication? How can the barriers be removed? Explain with suitable examples. (16)
- Q4) JSPL is looking for young and competent management students for internship. Apply for the position of Management Intern to: Manager (HR), JSPL, Angul, Odisha. (16)
- Q5) You are working as a Sales Head, Odisha for the Stationery Division of ITC. There has been a steep fall in sales in the last quarter. However, you competitors have done well. Prepare a survey report citing reasons for the decline in sales. Also suggest ways to improve. (16)
- Q6) a) Reading is not a passive skill. Justify this statement with appropriate examples. (16)
b) What are reading faults? How can it be corrected? Give examples.

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Total Number of Pages : 02

Course: MBA
Sub Code: 18MBA103

1st Semester Regular/Back Examination: 2022-23

Organizational Behaviour

BRANCH(S): BA,BM,FM,FM&HRM,GM,HRM,IB,LSCM,MBA,MBA (A & M),
MBA (M & F),MM,RM

Time: 3 Hours

Max Marks: 100

Q. Code: L623

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions :

(2 x 10)

- What are the characteristics of a group?
- How drives and motives are different?
- What is custodial model of organization behaviour?
- OB too has certain constraints. Discuss.
- How social cognition link to individual behaviour?
- What are the intrinsic and extrinsic rewards of motivation?
- Outline Myers Briggs personality classifications.
- Why trust is important for team effectiveness?
- What do you mean by selective perception?
- How a personality trait is to be recognized?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- How OB evolved with changes in human resource approach?
- Discuss the barriers to the change of attitude.
- Social perception is a complex process. Comment.
- Discuss the cognitive and behavioristic framework of organizational behaviour.
- How attribution theory works?
- What are the viewpoints of process theories of motivation?
- Distinguish equity theory from two factor model.
- How OB affect the harmony and development?
- What is the significance of individual attitude for the progress of organisation?
- Organization behaviour is a sum of individual behaviour. Comment.
- How Personality and Job-fit theory works?
- Elucidate the norms and principles of group dynamics.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** What are the components of emotional intelligence? Discuss the significance of emotional intelligence at workplace. (16)
- Q4** Discuss the personality types and useful tests. How personality affects the performance? (16)
- Q5** What is perception? What are the factors affecting perceptual process and perceptual errors? (16)
- Q6** Discuss the contemporary leadership approaches. Elucidate how different leadership styles work? (16)

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Total Number of Pages : 02

Course: MBA
Sub_Code: 18MBA104

1st Semester Regular/Back Examination: 2022-23

SUBJECT Management Principles

BRANCH(S): BA,BM,FM,FM&HRM,GM,HRM,IB,LSCM,MBA,MBA (A & M),
MBA (M & F),MM,RM

Time : 3 Hour

Max Marks : 100

Q.Code : L631

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions :

(2 x 10)

- What is a decision tree?
- What is upward communication? Give two examples.
- What is contingency planning? Give one example.
- Mention two reasons for incorporating change management in an organisation.
- Distinguish between centralization and decentralization.
- What is cross-cultural communication?
- Define organizational structure.
- What constitutes the external business environment?
- What is differentiation? Give examples.
- What is MBE? Give an example.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- What is delegation? Why is it important to delegate? What are the merits and demerits of delegation?
- What is contribution of Peter Drucker in the field of management? How is C.K Prahalad's model different?
- Give an account of management thoughts of Michael Porter, and Rensis Likert.
- What is meant by leadership style? What are different styles? Explain with examples.
- Compare and contrast formal planning and informal planning.
- What steps should a manager take to manage a cross-functional team that is also a multi-ethnic workforce?

- g) Explain the 14 principles of management.
- h) What is the applicability of McKinsey's management thought? Discuss.
- i) Elaborate the steps in decision making with examples.
- j) Distinguish between managerial functions and operative functions.
- k) People can be motivated only through financial rewards. Do you agree? Justify.
- l) Explain how power, authority and responsibility are linked.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** Discuss the role, responsibilities and skills of a manager in a manufacturing company. Will it be different in case of a service providing organisation? Explain. **(16)**
- Q4** Explain the process of Controlling. What are different ways of controlling? What are its merits and demerits? **(16)**
- Q5** What is MBO? How is it implemented? Discuss its advantages and disadvantages. **(16)**
- Q6** Planning is the most important of all the functions in management. Justify your answer by giving suitable examples. **(16)**

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Total Number of Pages : 03

Course: MBA
Sub_Code: 18MBA105

1st Semester Regular/Back Examination: 2022-23

SUBJECT: DECISION SCIENCE

BRANCH(S): BA,BM,FM,FM&HRM,GM,HRM,IB,LSCM,MBA,MBA (A & M),
MBA (M & F),MM,RM

Time : 3 Hour

Max Marks : 100

Q.Code : L642

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions :

(2 x 10)

- If $N=10$, $\sum X=120$ and $\sum X^2=1530$. Find the Coefficient of Variation.
- Calculate Mean deviation and quartile deviation if Standard deviation is 60.
- If the observations 3, 9, 27 and 81 occur with frequencies 4, 3, 2 and 1 respectively, Find their geometric mean.
- What do you mean by unbalanced transportation problem? How to balanced it?
- Write mathematical model of assignment problem.
- The coefficient of correlation of 5 pairs of observations is found to be 0.8. Is it significant?
- Write any two properties of regression coefficient?
- What are the basic components of Queuing system?
- A tax filling counter takes 4 minutes to process a file. Customers arrive at a rate of 12 per hour. Determine the average length of the waiting line.
- Write Kendall's notation in Queuing Model.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) From the following data calculate Mean and Median

Marks	Less than 5	Less than 10	5-15	15 and Above	20-25	25 and above	30 and above
No. of Students	7	20	38	55	20	5	1

- b) Calculate missing figures from following data:

	Group-I	Group-II	Group-III	Combined
No of Observations	50	?	90	200
Mean	113	?	115	116
Standard Deviation	6	7	?	7.746

- c) On an average, 5 customers reach a barber shop every hour. Determine the probability that exactly 2 customers will reach in 30- minutes period, assuming that the arrivals follow poisson distribution.

- d) The mean of 5 observations is 6 and variance is 8. If three numbers are 2,6,10..Find the other two.
- e) The coefficient of rank correlation between two subjects X and Y of 10 students was found to be 0.5. Later on it was found that the difference between the ranks in the two subjects was wrongly taken as 3 in place of 7. Find the correct rank correlation.
- f) In a restricted market, two manufacturers A and B are competing with each other. Over the year, 80% of the A's customers have shown their loyalty by using its product. Also B's customers switched back to A's product 60% of the time. (I) Estimate retention and loss/gain of each of the manufacturers and (II) calculate the probability of a customer purchasing A's product at the end of the second period.
- g) A company has five machines that are used for four jobs. Each job can be assigned to one and only one machine. The cost of each job on each machine is given in the following table. Find out total assignment cost.

Machine→ Job↓	A	B	C	D	E
1	7	9	13	8	9
2	10	7	7	8	7
3	8	9	12	9	5
4	12	6	10	4	6

- h) What is LPP? Explain its assumptions and advantages?
- i) A bakery keeps stock of popular brand of coke. Previous experience shows that the daily demand pattern for the item with associated probabilities is given below:

Daily Demands(Nos)	0	10	20	30	40	50
Probability	0.01	0.20	0.15	0.50	0.12	0.02

Use the following sequence of random numbers to simulate the demand for next 10 days. Also find out the average demand per day. Random Numbers are 30, 39, 65, 76, 12, 05, 73, 89, 19 and 52.

- j) A contractor has a choice between two courses of action: (a) A risky contract promising of Rs. 10 lakhs with a probability of 0.6 and Rs 6 lakhs with a probability of 0.4. (b) a diversified portfolio consisting of two contracts with independent outcomes each paying 5 lakhs with probability of 0.6 and Rs.3 lakhs with a probability of 0.4. Construct the decision tree for using EMV criteria. What is the optimal decision by using EMV criteria?
- k) Consider the following payoff matrix for two firms. Find the best strategy for both the firms:

Firm-B→ Firm-A↓	No advertising	Medium Advertising	Large Advertising
No advertising	62	52	42
Medium Advertising	72	72	52
Large Advertising	82	62	77

- l) Explain the concept of regression analysis and also differentiate between correlation and regression..

Only Long Answer Type Questions (Answer Any Two out of Four)

Shop↓	Warehouses					
	I	II	III	IV	V	Supply
A	8	6	6	9	7	100
B	7	8	9	6	10	125
C	5	6	8	5	6	175
Demand	60	80	85	105	70	400

Shop	A	B	C
Variable cost	14	16	15
Fixed Cost	9,000	6,000	7,000

$$X_1, X_2, X_3 \geq 0$$

Age	16	17	18	19	20	21
No of students appeared	250	200	150	120	100	80
No. of student passed	200	150	90	48	30	16

(b) What is decision making? Explain various steps involved in decision making process.

[illegible]

