

28/3/2023

FYB Com Sem II Regular & Atk March 2023
AFM II

SEAT NO. _____

CODE:

Duration: 3 hours

Marks: 100

- Instructions :- (1) All questions are compulsory having internal Options.
(2) Figures to the right indicate full marks.
(3) Use of simple calculator is allowed.
(4) Working notes should form part of answers.

Q:1 A) Match the Following Columns.(any ten)

	Column A		Column B
1	Bills Receivable honoured	a	Debited to Debtors Account
2	Credit sales	b	(Gross profit/Net Sales) X 100
3	Drawings	c	Debited to Branch Account
4	Expenses incurred by consignee for consignment	d	Shows loss
5	Loading on Goods sent on consignment	e	In proportion of Purchase
6	Relationship between Consignor and Consignee	f	Debited to Consignment Account
7	Debit balance of Branch account	g	Deducted from capital
8	Branch Expense paid by Head office	h	Deducted from stock on the date of fire
9	Salvage	i	Added to stock on the date of fire
10	Goods received but not included in purchase	j	Debited to Cash Account
11	stock on date of fire	k	Profit included in the stock
12	Gross profit ratio	l	Added to purchases
		m	Principal and Agent
		n	Valued at cost

10

Q:1 B) State whether following statements are True or False (Any Ten)

- 1) Under the Debtors method, opening balance of Outstanding expenses is Credited to Branch A/c
- 2) Branch stock account is prepared under debtor method of Branch accounting.
- 3) Under Debtors method, Credit sales are recorded on the credit side of Branch A/c.
- 4) Bad debts are debited to Consignment account if Del-Credere Commission is allowed to consignee.
- 5) Godown rent is treated as a recurring expense in respect of consignment accounting.
- 6) Performa-Invoice is a rough invoice which is sent to consignee for information purpose.
- 7) A branch is said to be dependent when its accounting is done at the Head Office.
- 8) Stock reserve account is credited to remove loading (profit) included in closing stock at branch.
- 9) If gross profit ratio is 25% on cost, the gross profit is equal to 20% on sales.
- 10) Average clause in an insurance policy for loss of stock applied when the value of stock on the date of fire is less than policy amount.
- 11) Sales return from customer is credited to Debtors account.
- 12) Single entry is the most appropriate system of accounting.

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Q:2 Answer (a) or (b) of the following:

- a) AP Bazar has a branch at Andheri. All the goods sent to the branch are invoiced to branch at 20% profit on sales. All expenses are reimbursed to the branch monthly, but petty expenses are incurred by the branch manager from branch cash balance. It is the custom of the branch to send all cash to the head office.

	Rs.
Opening stock (at invoice price)	1,90,000
Sundry debtors (opening)	1,54,000
Petty cash on hand (opening)	4,600
Office equipment (opening)	1,12,000
Goods sent to branch (at invoice price)	14,80,000
Goods returned to head office (at invoice price)	6,000
Goods returned by debtors	3,000
Cash sales	13,00,000
Credit sales	11,80,000
Discount allowed to customers	1,300
Expenses remitted by head office for:	
• Rent @ Rs. 1,400 per month	
• Salaries @ Rs.12,400 per month	
• Petty cash expenses @ Rs.1, 250 per month.	
Petty cash expenses incurred by Manager	18,400
Stock (at the end) (at invoice price)	1,84,000
Debtors	1,40,700

Depreciate branch office equipment @ 10% per annum.

Prepare Branch Account in the books of Head office and Branch debtors Account (Follow Debtors method).

OR

- b) SS Ltd has branch at Surat. Goods are invoiced to its Surat Branch at cost. Following information is obtained for the year 2021-22.

Particulars	Rs.
Opening stock at Branch on 01-04-2021	22,680
Goods sent to Branch	1,06,500
Goods returned by customers to Branch	900
Total Sales	1,40,280
Cash sales	50,250
Goods returned by Branch to Head office	1,050
Closing stock at branch on 31-03-2022	20,850
Debtors on 01-04-2022	39,000
Cash paid by customers to Branch	73,800
Discount to customers	4,080
bad debts	900
Rent	2,700
Salaries	10,950

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You are required to prepare the following Ledger Accounts in the books of Head Office (stock and Debtor method):

1. Branch Stock A/c
2. Goods sent to Branch A/c
3. Branch Profit and Loss A/c
4. Branch Debtors A/c

Q:3**Answer (a) or (b) of the following:****20**

- a) On 15th March 2023, a fire occurred in the premises of Mr. Ahuti and partly damaged the stock of goods. Salvage Rs. 7000. Policy amount Rs. 55,000.

Balance as on 31-12-2022:

Stock at cost	35,000
Debtors for goods	8,750
Creditors for goods	5,250

Transactions between 1-1-2023 to 15-03-2023

Cash received from debtors	70,000
Discount allowed to debtors	1,750
Goods returned by debtors	700
Cash paid to Creditors	1,29,500
Discount from creditors	1,400
Goods returned to creditors	350
Cash Sales	74,200
Goods given to relief fund at cost	1,750
Debtors for goods as on 15-03-2023	20,300
Creditors for goods as on 15-03-2023	10,500

Gross profit on cost 25% and firefighting expenses Rs. 4000. Prepare statement of claim.

OR

- b) Fire occurred on 30th June 2022 in the premises of Sartaj Ltd.

Particulars	2019-20	2020-21	2021-22	Upto 30-06- 2022
Opening Stock	45,000	67,500	68,850	72,180
Purchases	2,52,125	2,62,750	3,04,050	1,72,300
Return Outward	5,000	10,750	9,000	5,250
Opening Debtors	37,500	45,000	50,000	40,000
Carriage Inward	1,050	660	682	40,000
Cash received from Debtors	2,75,000	3,17,000	3,34,750	1,57,250
Return Inward	5,000	3,000	5,250	7,750

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Additional information:

- Accounts are closed on 31st March every year
 - Debtors as on 30-06-2022 were RS. 25,000.
 - Policy amount Rs. 2,50,000 & Salvage Rs. 1,500.
 - Goods are sold only on credit basis
 - Average gross profit of the preceding three completed accounting years was maintained by the company after 31st March 2022.
- Prepare statement of claim.

Q:4 Answer (a) or (b) of the following:

- a) M/s White & Co of Dadar Consigned 100 Television Sets to Mr. Red of Chennai by spending Rs.30,000 on carriage and 10,000 on insurance for goods in transit. The total cost price of Television Sets was Rs.26,00,000 but the invoice was made out to show a profit of 25% on cost price which can be sold in the market for higher prices as well. Mr. Red spends Rs.3,000 on account of loading and unloading expenses and also paid Rs.35,000 for showroom rent. He sold 60 Television Sets for total price of Rs.22,50,000 (Cash sales Rs.8,00,000 and balance on Credit). He is entitled to get a commission of 5% and del-credere commission of 2.5%. Mr. Red paid Rs.8,00,000 to M/s White & Co and accepted a bill for the balance. Prepare Consignment Account and Mr. Red Account in the books of M/s White & Co

20

OR

- b) Mr. Cool maintains his books on single entry system. From the following information, prepare Trading and P & L Account for the year ended 31-03-2023 and Balance Sheet as on that date. All necessary accounts should form part of your answer.

Summary of Cash Book			
Receipts	Amt (Rs)	Payments	Amt (Rs)
To Balance b/d	47,700	By Creditors	1,77,300
To Debtors	1,95,300	By Bills Payable	1,37,700
To Bills Receivable	1,19,700	By Wages	67,410
To Sales	1,30,500	By carriage Inward	990
To Interest	15,300	By salaries	39,600
		By Printing	4,770
		By Postage	4,230
		By Insurance	4,500
		By Drawings	37,800
		By Balance c/d	34,200
	5,08,500		5,08,500

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Particulars of Assets and Liabilities

Particulars	1-4-2022	31-03-2023
Investments	90,000	90,000
Debtors	2,25,000	2,61,000
Bills Receivable	90,000	81,000
Creditors	1,77,000	1,61,100
Bills Payables	36,900	12,600
Stock	1,26,900	1,02,600
Plant and Machinery	2,70,000	2,70,000
Loan from Mr. Kale	1,35,000	1,35,000

Adjustments:

- 1) Interest on loan from Mr. Kale was outstanding for the year @ 10% p.a.
- 2) Outstanding wages were Rs. 1260 and outstanding printing bills was Rs. 1890.
- 3) Insurance was prepaid to the extent of Rs. 1080.

Q:5 Answer (a) or (b) of the following:

20

(a) Answer the following:(Ten marks each)

- i) Explain Debtors method in branch accounting
- ii) Explain features and disadvantages of consignment.

OR

(b) Write short notes:(any four)(Five marks each)

- i) Distinguish between Pro-forma Invoice and Invoice
- ii) Objectives of Branch Accounting
- iii) Memorandum Trading Account
- iv) Total debtors Account
- v) Del Credere Commission
- vi) Average Clause

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CODE: _____

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Marks: 100

Instructions :- (1) All questions are compulsory having internal Options.
 (2) Figures to the right indicate full marks.
 (3) Use of a simple calculator is allowed.
 (4) Working notes should form part of answers.

- Q:1** A) Explain the following terms in 2 - 3 sentences (Any 05) 10
- 1) Open question
 - 2) Group dynamics
 - 3) Valedictory function
 - 4) Internal PR
 - 5) Advisory committee
 - 6) Participation in Group Discussion
 - 7) Suggestion schemes
 - 8) Exit interview
- B) Match the following: 05
- | Column-A | Column-B |
|-------------------------------|---------------------------------------|
| a) Agenda | i) Public Information Officer |
| b) Exhibition and trade fairs | ii) Formula for writing sales letter |
| c) Appraisal interview | iii) Tool of external public relation |
| d) Right to information | iv) Listed programme of various items |
| e) AIDA | v) Held once or twice every year |
- Q:2** Write Short Notes on any four of the following: 20
- a) Role of interviewee
 - b) Role of Participants in a meeting
 - c) Online interview
 - d) Disadvantages of meetings
 - e) Three aspects of Group Discussion Test
 - f) Types of Meeting
- Q:3** Answer any two of the following: 20
- a) Define committee. Discuss the different types of committees.
 - b) What do you mean by Conference? Describe various post conference activities.
 - c) Define Crisis. Discuss the role of the Public Relations Department in Crisis management.
- Q:4** Write any four of the following letters: 20
- a) Write a letter of inquiry to Magnum Stationery Limited enquiring about various types of jute folders that you wish to distribute to the participants in a conference organised in your office.
 - b) Meghna Stores, Andheri has received a consignment of cloth from Kiara Textiles, Dhanbad in a damaged condition. Write a complaint letter on their behalf.
 - c) Write a sales letter to promote the sale of any one of the following
 i) A bicycle ii) A laptop
 - d) M/S Jani & Co. from Mumbai had purchased raw material from Solid Material Co., Pune. The material turned out to be of substandard quality. This was brought to the notice of Solid Material Co.. In spite of the repeated pleas by the Proprietor of M/S Jani & Co. to replace the material, Solid Material Co. did not respond to any query.

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- Write a letter to the Consumer Redressal Forum seeking justice.
- Q:5 (e) Many street lights on CBC Road, Powai have not been working for the past 2 months and the complaints to authorities have not been attended to. Write an RTI query. 10
- (a) Draft a business proposal to be made by Smooth Language Training Centre to A M College to start a part-time "Language Training Course" on their premises on a revenue sharing basis.

OR

- Q:6 (b) Your Manager found that the number of complaints related to the refrigerator has increased in a particular area. She has formed a committee of Staff to study the reason behind it. Draft the committee's report and the covering letter for the same. 10
- Draft the Notice and Agenda of the 25th Annual General Meeting of Love India Housing Ltd. Also draft the following Resolutions:

- i) Approval of the Annual Report
- ii) Appointment of the Company Secretary
- Q:7 Summarise the following passage and give a suitable title: 05

With its emphasis on breathing practices and meditation—both of which help calm and center the mind— it's hardly surprising that yoga also brings mental benefits, such as reduced anxiety and depression. What may be more surprising is that it actually makes your brain work better.

When you lift weights, your muscles get stronger and bigger. When you do yoga, your brain cells develop new connections, and changes occur in brain structure as well as function, resulting in improved cognitive skills, such as learning and memory. Yoga strengthens parts of the brain that play a key role in memory, attention, awareness, thought, and language. Think of it as weightlifting for the brain.

Studies using MRI scans and other brain imaging technology have shown that people who regularly did yoga had a thicker cerebral cortex (the area of the brain responsible for information processing) and hippocampus (the area of the brain involved in learning and memory) compared with nonpractitioners. These areas of the brain typically shrink as you age, but the older yoga practitioners showed less shrinkage than those who did no yoga. This suggests that yoga may counteract age-related declines in memory and other cognitive skills. Research also shows that yoga and meditation may improve executive functions, such as reasoning, decision making, memory, learning, reaction time, and accuracy on tests of mental acuity. All exercise can boost your mood by lowering levels of stress hormones, increasing the production of feel-good chemicals known as endorphins, and bringing more oxygenated blood to your brain. But yoga may have additional benefits. It can affect mood by elevating levels of a brain chemical called gamma-aminobutyric acid (GABA), which is associated with better mood and decreased anxiety.

Meditation also reduces activity in the limbic system—the part of the brain dedicated to emotions. As your emotional reactivity diminishes, you have a more tempered response when faced with stressful situation.

Source: <https://www.google.com/search?q=mental+health+and+yoga&source=hp&ei=q1D8Y- &scient=gws-wiz>

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CODE:

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Marks: 100

Instructions :- (1) All questions are compulsory having internal options.
(2) Figures to the right indicate full marks.

- Q:1 A) Choose the correct answer from the options given below (Any 10) 10
- 1) Which of the following is not a feature of perfect competition?
 - a) Price taker
 - b) Homogenous products
 - c) Free entry and exit
 - d) Government intervention
 - 2) A competitive firm will maximize profit at the level of output at which Marginal revenue equals -----.
 - a) Average cost
 - b) Average variable cost
 - c) Total cost
 - d) Marginal cost
 - 3) Demand for monopoly firm's product is -----.
 - a) Perfectly elastic
 - b) Less elastic
 - c) Perfectly inelastic
 - d) More elastic
 - 4) In the long run, a firm in monopolistic competition will earn-----.
 - a) Excess profit
 - b) Loss
 - c) Normal profit
 - d) No profit
 - 5) Increase in selling costs ----- the demand for the product.
 - a) Decrease
 - b) Equates
 - c) Increase
 - d) Constant
 - 6) In ----- oligopoly, the commodity sold are homogenous.
 - a) Pure
 - b) Mixed
 - c) Impure
 - d) Standard
 - 7) While determining full cost price, the firm uses-----
 - a) Fully allocated average cost
 - b) Only average variable cost
 - c) Only overhead costs
 - d) Marginal cost
 - 8) ----- dumping takes place when there is a temporary sale of commodities at a lower price in the international market to drive out competition.
 - a) Persistent
 - b) Predatory
 - c) Sporadic
 - d) Standard
 - 9) Transfer pricing refers to ----- pricing.
 - a) Intra-firm
 - b) Multi-product
 - c) Marginal cost
 - d) Cost-plus
 - 10) ----- is a process involving planning, analysis, evaluation and selection of most profitable projects for investment.
 - a) Capital accumulation
 - b) Capital saving
 - c) Capital budgeting
 - d) Capital -output ratio

CODE:

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Marks: 100

Q:5 Attempt A and B or C and D:

- a) Elaborate the significance of Capital Budgeting. 8
- b) A business firm has to choose between five alternative projects, all of which will involve the same expenditure of Rs.10,00,000. The average annual return expected from these projects are as follow: 7

Project	A	B	C	D
Average annual returns (Rs)	2,00,000	4,00,000	80,000	1,00,000

Using Payback Period Criterion, select the most suitable project, rank the project, Justify your answer.

OR

- c) A company wants to invest Rs 10, 00,000 in a new project. The project is expected to give a return of Rs.3, 00,000 per year over a period of 5 years. 8
- (i) Calculate the Discounted present value (rate of discount 10%)
- (ii) Find out the Net present value.
- (iii) Comment on the profitability of the project.
- d) Write a note on the Internal rate of Return criterion of investment appraisal. 7

Q.6 Attempt A and B OR Write short notes on any four. 20

- A. Explain short -term and long -term equilibrium under monopolistic competition.
- B. Elaborate the role of advertisement in detail with examples.

OR

Q:6 Write Short Notes on (Any 4) 20

- a) Features of Monopoly
- b) Characteristics of monopolistic competition
- c) Distinguish between collusive and non-collusive oligopoly
- d) Degrees of price discrimination
- e) Dumping
- f) Steps in Capital Budgeting

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CODE:

Duration: 3 hours

Marks: 100

10

- Q:1 B) State whether following statements are True or False (Any 10)**
- 1) The potential service product is the lowest level of service product.
 - 2) Idea screening is required in service development cycle.
 - 3) Departmental store is a form of non-store forms.
 - 4) Organised retailing is a model version of retailing
 - 5) ATM cards create inconvenience to the customers.
 - 6) KPO is high end business process outsourcing
 - 7) The business to customer transactions reduces distribution costs.
 - 8) There are cases of billing problems in case of e-commerce transactions.
 - 9) Improvement in quality should be defined from the marketers perspective.
 - 10) Retail franchising is a short term contract between two parties.
 - 11) Information technology does not play a significant role in logistics.
 - 12) Over the years, e-commerce trade has increased in India.

Q:2 Answer any two of the following:

- a) Define services. Explain the key features of services.
- b) Discuss the factors influencing customer expectations service
- c) Explain the challenges faced by entrepreneurs in the service sector

15

Q:3 Answer any two of the following:

- a) Explain the factors responsible for the growth of retailing in India.
- b) Discuss the guidelines for store planning with reference to design and layout.
- c) Describe the prospects of retailing in India.

15

Q:4 Answer any two of the following:

- a) Discuss the advantages of Enterprise Resource Planning systems.
- b) Explain the objectives of opening of insurance sector to private parties in India.
- c) Discuss the importance of logistics

15

Q:5 Answer any two of the following:

- a) Explain the functions of E-commerce.
- b) What are the Major activities involved in Business to Customer
- c) Describe the factors responsible for the transition to e-commerce in India

15

Q:6 Write Short Notes on (Any 4)

- a) Service product
- b) Reasons for opportunity in service sector
- c) Careers in retailing
- d) Describe the advantages of retail franchising in India
- e) Advantages of internet banking
- f) Explain the importance of e-commerce

20

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Duration: 3 Hrs

Regular & ATKT

Total Marks: 100

E.V.S

Instructions:

- ❖ All Questions are COMPULSORY.
 - ❖ Numbers to the right indicates marks allotted per question.
 - ❖ Attach the Map supplement to the main answer book.
 - ❖ Draw appropriate figures and diagrams wherever applicable.
-

Q.1. (a) On the Outline map of Mumbai provided to you, mark and name the following (10)

- i. An area having environmental problems due to cattle sheds.
- ii. An area affected by landslides and rockfalls.
- iii. An area famous for Wonderland.
- iv. An area facing the problem of marine erosion.
- v. A major slum area.
- vi. An area famous for water sports.
- vii. A creek having mangroves.
- viii. An area subject to air pollution due to chemical and petrochemical industries.
- ix. An area subject to noise pollution due to textile industry.

(b) On the Outline map of Konkan provided to you, mark and name the following (10)

- i. A hot spring site.
- ii. An area subject to sewage discharge.
- iii. A bird sanctuary.
- iv. An area subject to air pollution due to fisheries.
- v. An area subject to noise pollution due to recreational activities.
- vi. A port which frequently gets silted.
- vii. A major beach resort.
- viii. A fort site.
- ix. A pilgrim centre.
- x. A conventional energy generation site.

Q. 2. Attempt any two of the following:

- a) Write a detailed note on E-Waste. (10)
- b) 'Solid Waste needs to be dealt with great care'. Discuss. (10)
- c) What is Bio-Medical Waste? What are the different methods used for Bio-Medical Waste Management? (10)

Q. 3. Attempt any two of the following:

- a) Describe food hunger? Explain the factors responsible for Malnourishment and Hunger in India. (10)
- b) Write a detailed note on Ozone layer depletion. (10)
- c) What is noise pollution? Explain the causes, impacts and measures take to control noise pollution. (10)

Q. 4. Attempt any two of the following:

- a) Elaborate on the New Tourism Policy of India. (10)
- b) Discuss on the advantages and disadvantages of tourism as an economic activity. (10)
- c) Write a note on Medical Tourism and MICE Tourism (10)

Q. 5. Attempt any two of the following:

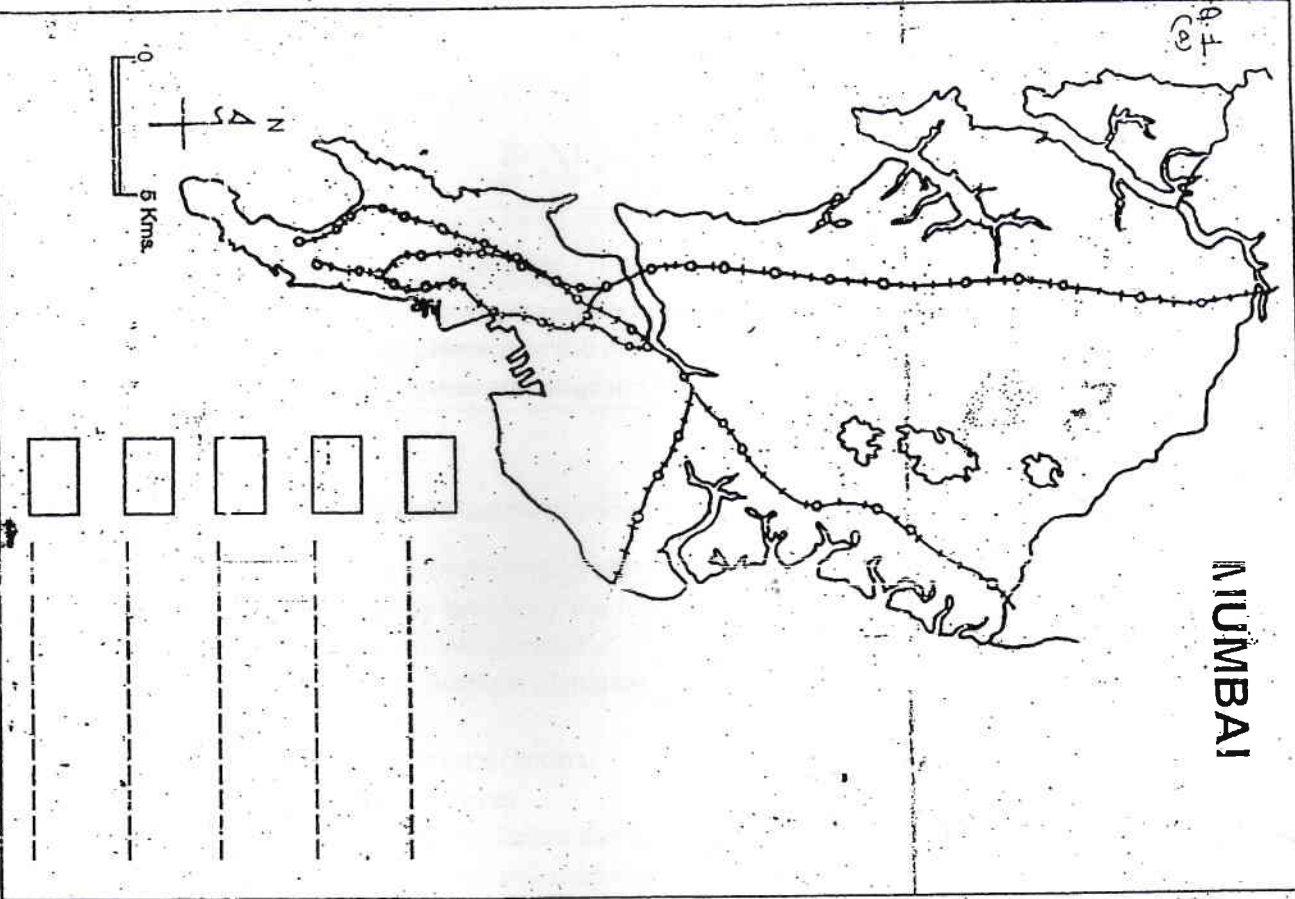
- a) Deliberate on 'Save the Western Ghat' movement and the 'Save Jaitapur' Movement. (10)
- b) Elaborate on major environmental protection acts in India. (10)
- c) Elucidate on the application of GST in Environmental Management. (10)

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SEAT NO. _____

Supervisor's Signature : _____

Q.1
(a)



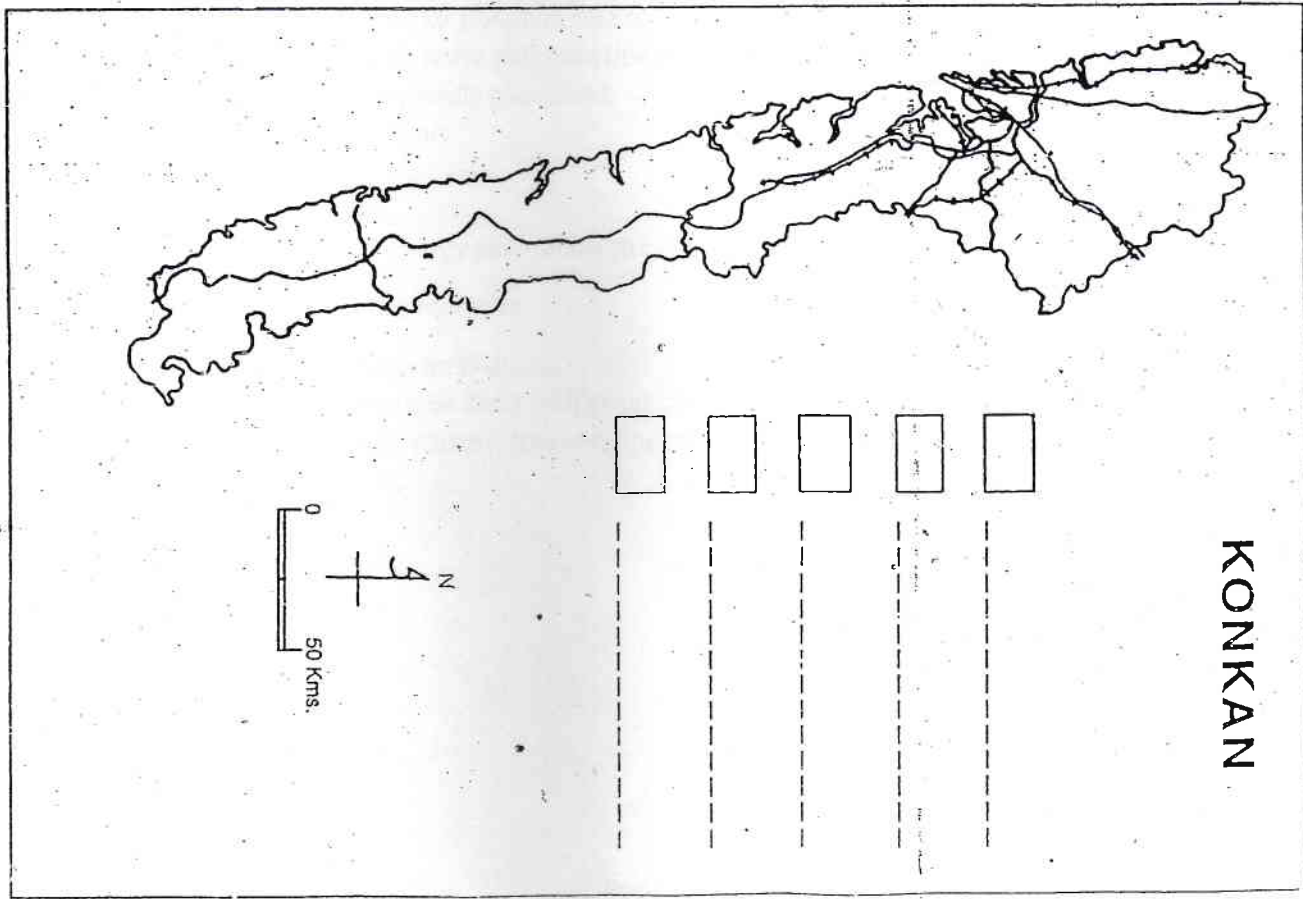
MUMBAI

MUP/L 691-25,000-3-04

SEAT NO. _____

Supervisor's Signature : _____

Q.1
(b)



KONKAN

MUP/L 690-25,000-3-04

ATKT & Regular
Maths & Stats.

Marks: 100

Time: 3 hours

N.B.:

1. All five questions are compulsory.
2. Each question carries 20 marks and each sub question carries 5 marks.
3. Use of a simple calculator is allowed.
4. Use of a scientific calculator, digital diary or a mobile phone is not allowed.
5. Graph papers will be provided on request.

Q.1 Attempt any FOUR of the following.

- a Find derivative of the following functions 5
i) $y = 5^x + 3x^4 - 2\sqrt{x} + 100$
ii) $y = \frac{(x^2 + 4x + 5)}{(x + 1)}$
- b If $f(x) = x^2 + 2x - 7$, find 'x' if $f(x) = f(x + 1) + 5$ 5
- c The total revenue function is given by $R = x^3 - 24x^2 + 189x + 100$. 5
Where $x =$ demand. Find x for which the revenue is maximum.
- d The total cost function is given by $C = x^3 + 2x^2 + x + 3$. Find average 5
cost and marginal cost functions when $x = 5$.
- e i) Find the elasticity of demand if the marginal revenue is 36 and the 5
average price is 45.
ii) Find the marginal revenue if the price is 75 and the elasticity of
demand is 3.

Q.2 Attempt any FOUR of the following.

- a The simple and compound interest for 2 years on the same principal, 5
at the same rate are Rs. 12,000/- and Rs. 12,480/- respectively. Find
the principal amount and the rate of interest.
- b i) Find the future value of Rs. 50,000/- kept in a fixed deposit 5
account, after 3 years at 8% rate of compound interest p.a.
ii) Find the present value at 5% p.a. rate of interest of Rs. 15,000/-
payable 3 years from now.
- c Ms. A deposited Rs. 10,000/- at the end of each quarter at 12% 5
compound interest p.a. Find the amount he will receive after 2 years.
- d Ms.B took a loan of Rs. 30,000/- with 10% interest per month, to be 5
repayment in 5 months. Calculate the EMI using reducing balance
method.

- e Mr. C bought a T.V. set with cash payment of Rs. 10,000/- and 4 monthly installments of Rs. 5,250/- each. Find the cost of the T.V. set, if the company charges 12% interest, compounded annually. 5

Q.3 Attempt any FOUR of the following.

- a Write the short note on scatter diagram. 5

- b For the following data calculate Karl Pearson's coefficient of correlation 5

X	10	20	30	40	50	60
Y	20	16	13	12	17	14

- c Calculate Spearman's rank correlation coefficient for the following data. 5

X	80	100	77	80	115	99
Y	20	19	15	20	18	20

- d From the following data find the regression equation Y on X, and also find Y when X=17 (Note: For calculations use values correct up to 2 decimal places) 5

X	2	4	6	8	10	12	14
Y	10	13	15	11	19	21	16

- e Estimate the marks in Statistics of a student who secured 50 marks in Accounts from the following bivariate data: 5

	Accounts	Statistics
Mean marks	90	70
Standard deviation	2	3
Correlation coefficient	0.5	

Q.4 Attempt any FOUR of the following.

- a Write definition of time series, and describe the following components of time series. 5

- i) Secular Trend
- ii) Cyclical Variation

- b Calculate 3 yearly moving averages from the following time series. Also plot the given data and the moving averages on a graph paper. 5

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sales	140	130	150	160	110	190	150	140	120

- c Fit a straight-line trend for the following data, 5

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sale	08	10	12	13	15	18	19	21	24

- d Calculate Laspeyre's, Paasche's and Fisher's Index price Number from the following data 5

Commodities	Base Year		Current Year	
	Price	Quantity	Price	Quantity
P	70	20	90	30
Q	60	10	65	20
R	50	30	72	50
S	90	60	100	90

- e Construct Index Number using Family budget method for the following data: 5

Commodity	Base year price	Current year price	Weights
A	10	17	10
B	15	23	20
C	12	18	10
D	13	16	10

Q.5 Attempt any FOUR of the following.

- a If mean and variance of a Binomial distribution are 4 and 2.4 respectively, find probability that number of successes is i) Only 1, ii) at most 1 5
- b A fair die is rolled 3 times with probability of successes is equal to 0.5. Find the probability of odd number appear on the uppermost face is i) exactly once ii) exactly two times iii) less than three times. 5
- c Define Poisson Distribution for non-negative values by considering parameter 'm' and write properties of Poisson Distribution. 5
- d For a Poisson distribution if $P(x = 3) = P(x = 4)$ find the mean and hence find i) $P(x = 0)$, ii) $P(x = 1)$, iii) $P(x \leq 1)$. [Given $e^{-4} = 0.018$] 5
- e If X is a normal variate with mean 100 and standard deviation 10. Find i) $P(x \geq 120)$ ii) $P(x \leq 120)$ iii) $P(80 \leq x \leq 120)$ [Given: area under the curve between $z = 0$ and $z = 2$ is 0.4772] 5
