

Seat no:	
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Time: 03 hrs

Max. Marks. 100

- Note: 1) **ALL** questions are **COMPULSORY**.
 2) Figures to the right indicate full marks.
 3) Do not write anything except seat no. on the question paper.

- Q.1 A) **Fill in the blanks with correct alternative and rewrite the sentence: (ANY TEN)** [10]
- While preparing final accounts of a manufacturing concern, the depreciation on machinery is transferred to _____.
 A) Trading account credit side B) P & L account debit side
 C) Manufacturing account debit side D) P & L account Credit side
 - The purpose of AS 1 is to establish a Standard as to _____.
 A) The preparation of final statements B) Fundamental accounting assumptions
 C) Desirable accounting policies D) Disclosure of accounting policies
 - The Manufacturing account is prepared to find out _____.
 A) Gross Profit B) Cost of materials consumed
 C) Cost of production D) Net profit
 - In Hire Purchase depreciation on asset should charged at a certain rate on the _____ of the asset acquired.
 A) Hire Purchase Price B) Written down value
 C) Installment D) Cash Price
 - Closing stock of finished goods should be valued at _____.
 A) Cost price only B) Market price only
 C) Cost price or market price whichever is lower D) Cost price or market price whichever is higher
 - The person who sells under hire purchase system is called _____.
 A) Hire purchase vendor B) Consignor
 C) Consignee D) Hire purchase buyer
 - Sale of scrap is shown on _____.
 A) Credit side of Trading Account B) Credit side of Manufacturing Account
 C) Credit side of Profit & Loss Account D) Debit side of Profit & Loss Account
 - In departmental accounts, salary is allocated based on _____ in each department
 A) Sales turnover B) Number of Machines
 C) Number of Hours D) Number of Employees
 - Cost of goods sold is equal to _____.
 A) Opening stock + Purchases – Direct Expenses – Closing Stock B) Opening stock + Purchases + Direct Expenses – Closing Stock
 C) Opening stock + Purchases +Direct Expenses +Closing Stock D) Opening stock – Purchases +Direct Expenses – Closing Stock
 - While preparing departmental final accounts, the Rent expenses is distributed amongst departments in the ratio of _____.
 A) Area occupied B) Number of light points
 C) Sales ratio D) Purchase ratio

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(P.T.O)

- 11) _____ Assets cannot be converted into cash.
- A) Fixed Assets B) Fictitious Assets
C) Current Assets D) Tangible Assets
- 12) Salaries of office staff appear in _____.
- A) Trading Account B) Profit & Loss Account
C) Balance Sheet D) Manufacturing account

Q.1 B) State whether the following statements are TRUE or FALSE: (ANY TEN), students need not rewrite the entire sentence. [10]

- 1) Income receivable is shown on the asset side of the Balance Sheet.
- 2) Interest under Hire purchase is charged by the vendor.
- 3) Departmental final accounts are prepared to know the profit/loss of each department separately.
- 4) Discount allowed is allocated on the basis of sales of each department.
- 5) Gross profit is the excess of sales over the cost of goods sold.
- 6) Down payment Includes Interest.
- 7) Capital Expenditure is non-recurring in nature.
- 8) Accounting standard 2 applies to agricultural products.
- 9) Insurance premium on comprehensive insurance policy is transferred to general profit and loss account while preparing departmental final accounts.
- 10) Manufacturing Account always shows a debit balance.
- 11) Prepaid expenses is a liability
- 12) Balance sheet shows the profitability of the business.

Q.2 A) From the following Trial Balance of Mr. Ganesh, prepare Manufacturing A/c, Trading A/c, Profit and Loss A/c for the year ended 31st March 2024 and Balance Sheet as on that date: [20]

Particulars	Dr. (Rs.)	Cr. (Rs.)
Capital A/c		1,00,000
Opening Stock - Raw Materials	24,000	
Opening Stock - Work in Progress	4,000	
Opening Stock - Finished Goods	31,000	
Purchase of Raw Materials	2,50,000	
Direct Wages	36,000	
Factory Rent	8,000	
Machinery	1,00,000	
Sales		4,35,000
Cash at Bank	6,000	
Travelling & Conveyance	20,000	
Salaries	24,000	
Discount Allowed	7,000	
Sundry Creditors		90,000
Sundry Debtors	40,000	
Vehicles	75,000	
Total	6,25,000	6,25,000

Following further information is provided to you:

1. Closing stocks as on 31st March 2024 were:
Raw Materials Rs. 50,000, Work-in-progress Rs. 16,000, Finished goods Rs. 70,000.
2. Depreciate Machinery @ 10% p.a. and Vehicles @ 15% p.a.
3. During the year the unrecorded credit sales amounted to Rs. 30,000
4. Provide Reserve for Doubtful Debts @ 5% on Debtors

OR

Q.2 B) State whether the following Expenditures or Receipts are Capital or Revenue. Give reasons: [20]

- 1) Wages of Rs 20,000 paid for erection of Machinery.
- 2) Sold Government Securities held as Investment for Rs 15,00,000.
- 3) Received Rs 2,000 as dividend on shares.

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- 4) Spent Rs 30,000 for white washing of Factory building.
- 5) Premium of Rs 35,000 was received on issue of 8 % Preference shares.
- 6) Money received from sale of goods.
- 7) Repayment of loan taken earlier.
- 8) Repairs of machinery Rs. 10,000.
- 9) Salary paid to the office peon.
- 10) A second hand car purchased for Rs 3,00,000.

- Q.3 A) The following particulars have been extracted in respect of Product A. Prepare a stores ledger account and ascertain the value of stock on 31st March 2024 by using First in First Out & Weighted Average Method. [20]

Receipts:

01/03/2024 Opening Stock	200 Units at Rs. 3.50 Per unit
04/03/2024 Purchased	300 Units at Rs. 4.00 Per unit
13/03/2024 Purchased	900 Units at Rs. 4.30 Per unit
23/03/2024 Purchased	600 Units at Rs. 3.80 Per unit
26/03/2024 Purchased	500 Units at Rs. 5.00 Per unit

Issues:

05/03/2024 Sold	400 unit
15/03/2024 Sold	600 unit
25/03/2024 Sold	500 unit
28/03/2024 Sold	750 unit

OR

- Q.3 B) Jeevan Anand Transport Ltd purchased trucks from the Hindustan Motors Ltd., on Hire Purchase Basis. The cash price of the truck was Rs. 1,60,000. The amounts were payable as under: [20]
Rs.50,000 on the date of purchase on 01/01/2021
1st Instalment Rs.40,000 on 31/12/2021
2nd Instalment Rs.40,000 on 31/12/2022
3rd Instalment Rs.41,239 on 31/12/2023
The Hindustan Motors Ltd. charged interest at 5% Per annum on the unpaid amount. You are required to give Truck Accounts, The Hindustan Motor Ltd. Account and interest in the books of the Jeevan Anand Transport Ltd., Under credit purchase method.

- Q.4 A) From the following Trial balance as on 31st March 2024 of Mr. K. Prepare Manufacturing A/c Trading A/c and Profit and Loss A/c for the year ended 31st March 2024 and Balance Sheet as on that date: [20]

Particulars	Dr. (Rs.)	Particulars	Cr. (Rs.)
Purchase of Raw Material	63,000	Sales	1,00,000
Opening Stock – Raw Material	6,400	Capital	23,000
Opening Stock - WIP	1,200	Creditors	9,000
Opening Stock – Finished Goods	4,000	Provision for Bad Debts	400
Freight on Raw Material	600	Bills Payable	9,200
Direct Wages	4,800	Discount Received	2,000
Factory Rent	4,000		
Factory Power and Fuel	3,600		
Factory Electricity	4,200		
Machinery	19,000		
Drawing	3,000		
Office Salaries	4,600		
Cash at Bank	1,000		
Selling and Distribution Expenses	4,600		
Bank Charges	1,400		
Discount Allowed	1,000		
Bad Debts	400		
Sundry Debtors	9,800		
Sundry Expenses	600		
Computer	6,400		
Total	1,43,600	Total	1,43,600

1. Closing stock as on 31st March 2024 was Raw Material Rs. 3,200, Work- in- progress Rs. 2,000 and Finished goods Rs. 5,600.
2. Outstanding Factory Rent is Rs. 200.
3. Depreciate machinery @ 5% p.a. and Computer @ 20 % p.a.
4. Provide Reserve for Doubtful Debts @10% on Debtors.

OR

- Q.4 B) A firm has two departments X and Y from the following figures prepare Departmental Trading and Profit and Loss A/C for the year ended 31st March 2024 [20]

Particulars	X	Y
Opening Stock	21,600	25,300
Purchase	1,05,000	1,40,000
Carriage Inwards	1,250	1,000
Wages	3,500	2,800
Sales	1,75,000	2,00,000
Discount Received	2,100	
Rent and Rates	4,000	
Travelling Expenses	3,000	
Carriage Outwards	4,500	
General Expenses	3,500	
Advertisement	6,000	
Discount Allowed	1,500	
Insurance	1,000	
Selling and Distribution Expenses	1,500	

The further information is relevant:

- a) General Expenses and Insurance are allocated in the ratio 2:3.
- b) The area occupied by X 4/5 and Y is in 1/5.
- c) The closing stock of Department X Rs. 31,200 and Y Rs. 42,200.
- d) Other expenses and incomes to allocated between the two departments on the suitable basis.
- e) During the year Department X transferred goods costing Rs. 4000 to Department Y.

- Q.5 A) Explain in detail AS-1. [10]
 B) Explain in detail AS-9. [10]

OR

- Q.5 **Write Short Notes: (ANY FOUR)** [20]

- A) Manufacturing account of a manufacturing concern
- B) Features of FIFO method
- C) Items of inventory excluded from the scope of AS-2
- D) Inter-Departmental Transfer
- E) Features of Capital Expenditures
- F) Basis of allocation of expenses amongst departments

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- Note: 1) **ALL** questions are **COMPULSORY**.
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- Q.1 A) **Explain the following terms in two to three sentences: (ANY FIVE)** [10]
 i) Encoding and Decoding
 ii) Internet
 iii) Downward communication
 iv) Kinesics
 v) Written Communication
 vi) Semantic barrier
 vii) Empathic listening
 viii) Complimentary Close
- Q.1 B) **Match the following:** [05]
 1) Vlog a) Study of voice volume, pitch and speed of speaking
 2) Interpersonal communication b) Documents sent along with the letter
 3) Paralanguage c) needs mental discipline
 4) Enclosures d) blog comprising videos
 5) Good listening e) communication between two individuals
- Q.1 C) **Fill in the blanks choosing the best alternative from the ones given below:** [05]
 i) A _____ letter is one which expresses the personal opinion of a referee.
 A) confirmation B) recommendation
 C) termination D) appointment
- ii) _____ feedback provides an assessment of the person who communicates.
 A) Descriptive B) Prescriptive
 C) Evaluative D) Procedural
- iii) When a number of people, irrespective of their status sit down and confer with one another to arrive at a decision acceptable to all, it is known as _____.
 A) concept B) conscience
 C) compromise D) consensus
- iv) _____ reveals the identity of the sender.
 A) Inside address B) Salutation
 C) Head address D) Subject line
- v) _____ media blurs private/ public boundaries.
 A) Journalistic B) Social
 C) Entertainment D) Web
- Q.2 **Write short notes on: (ANY FOUR)** [20]
 a) Horizontal Communication
 b) E mail
 c) Grapevine Communication
 d) Moodle
 e) Process of communication

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(P.T.O)

- Q.3 f) Disadvantage of Oral Communication [20]
Answer the following questions: (ANY TWO)
- A) Explain the term psychological barriers to communication. Discuss in detail any three psychological barriers to communication.
- B) Define listening. Discuss ways of improving listening skills.
- C) What is business ethics? Discuss the ethics that should govern the user of the computer and internet.
- Q.4 **Draft a reply in response to the following advertisement:** [10]
“A reputed publishing house requires Junior Accountants. Interested commerce graduates familiar with Tally and the use of computer, may send their application with resume within ten days to P.O. Box 2520, The Times of India, Mumbai-400001 “.
- Q.5 **Draft the following letters: (ANY FOUR)** [20]
- A) Parth has passed B.com with a 1st class. He wishes to pursue MBA in Marketing from Boston University in the United States of America. Draft his statement of purpose.
- B) Draft a letter of recommendation for your junior who is applying for the post of senior sales officer at Tata Textiles.
- C) You have been offered the post of Accounts Officer at Nexus Pvt. Ltd. Draft your reply accepting the offer.
- D) Mr. Kiran Patel of Primus Pvt. Ltd. , Mumbai, plans to resign from his post of Assistant Sales Manager. Draft his letter of resignation.
- E) As the manager of Star Bank, draft a letter of appreciation to an employee of the bank for working overtime and maintaining good customer relations.
- Q.6 A) **Write a paragraph in about one hundred and fifty words: (ANY ONE)** [05]
- i) The challenges of using AI
- ii) My ambition
- Q.6 B) **Read the following situation carefully and answer the questions given below:**
- Mr. Vishal Kumar, the newly appointed Branch Manager at Jan Kalyan Bank believed that matters concerning the working of the bank must be routed through the various channels of hierarchy. He did not encourage staff to meet him. As a result a lot of time was spent in matters being dealts with at various levels of the hierarchy before finally reaching Mr. Kumar. This created dissatisfaction among the staff. Also, delayed decision making affected the banks working.
- i) Identify & explain the problem in the channel of communication that Mr. Kumar practices. [03]
- ii) How can the problems faced by the staff be overcome? [02]

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Q.1 A) **Select the best answer from the given options and rewrite the statement: (ANY TEN)** [10]

- i) Which of the following is the scope of business economics?
 - a) Pricing policies
 - b) Manpower
 - c) Output
 - d) Input Supply
- ii) Business economics deals with _____.
 - a) Government
 - b) Foreign Trade
 - c) Firm
 - d) Monetary Policy
- iii) Which of the following is the basic concept of business economics.
 - a) Money Supply
 - b) Investment
 - c) Saving
 - d) Opportunity cost
- iv) The slope of market demand curve is _____.
 - a) Upward sloping
 - b) Vertical
 - c) Downward sloping
 - d) Horizontal
- v) Demand means _____.
 - a) Desire
 - b) Ability to pay
 - c) Willingness to pay
 - d) Desire + Ability to pay + Willingness to pay
- vi) The promotional elasticity of demand is also known as _____.
 - a) Advertising elasticity
 - b) Cross elasticity
 - c) Income elasticity
 - d) Price elasticity
- vii) Production function is the relationship between _____ of a firm.
 - a) Physical Input
 - b) Physical output
 - c) State of technology
 - d) Physical input + physical output + state of technology
- viii) Slope of Iso-cost line is _____.
 - a) Positive
 - b) Negative.
 - c) Vertical
 - d) Horizontal
- ix) _____ is path connecting optimal input combinations as the scale of production expands.
 - a) Demand
 - b) Expansion path
 - c) Supply Path
 - d) Vertical Path
- x) Cost function written as _____.
 - a) $C = f(Q, T, P)$
 - b) $C = f(Q^* T^* P)$
 - c) $C = f(Q + T + P)$
 - d) $C = f(\bar{Q}, \bar{T}, \bar{P})$
- xi) Which of the following is cause of diseconomies of scale.
 - a) Technical Factor
 - b) Information
 - c) By product
 - d) Disintegration
- xii) The linear cost and revenue curve has _____ break-even point.
 - a) 1
 - b) 3
 - c) 2
 - d) 4

(P.T.O)
[10]

Q.1 B) **Write whether the following statements are TRUE or FALSE: (ANY TEN)**

- i) Marginal means additional.
- ii) The total revenue curve under perfect competition increases at a constant slope because marginal revenue is constant and equal to price.
- iii) The average revenue curve under perfect competition is vertical.
- iv) The nature of a commodity affects its price elasticity.
- v) The income elasticity of demand for normal goods is positive.
- vi) The cross elasticity of demand for unrelated goods is zero.
- vii) The slope of an isoquant is positive.
- viii) The law of variable proportions applies in the short run.
- ix) Total product is maximum when marginal product becomes zero.
- x) A change in price affects the break-even point.
- xi) The shape of the short-run average cost curve is V-shaped.
- xii) The break-even chart shows the short-run relationship between total cost, total revenue, and the rate of output of a firm.

Q.2 A) Explain opportunity cost principle, incremental and marginal concepts as basic tools in the study of business economics. [08]

B) Discuss the scope of business economics. [07]

OR

C) Discuss the concepts of total product, average product, and marginal product. [08]

D) Explain the basics of market demand, market supply and equilibrium price. [07]

Q.3 A) Discuss the nature of demand curves in different market structures. [08]

B) Explain the price elasticity of demand with suitable examples. [07]

OR

C) Explain the income elasticity of demand with suitable examples. [08]

D) Discuss the significance of demand forecasting. [07]

Q.4 A) Discuss the law of variable proportion with a suitable diagram. [08]

B) Explain the properties of Iso-quant curve. [07]

OR

C) Explain the law of return to scale with the help of suitable diagram. [08]

D) Discuss the economics of scale. [07]

Q.5 A) Distinguish between fixed cost and variable cost [08]

B) Given TFC – Rs. 50/-. Calculate TC, AFC, AVC and MC. [07]

Output (Units)	0	1	2	3	4	5	6
TVC	0	25	50	70	100	150	220

OR

C) What are the features of long run Average cost curve? [08]

D) Explain the break-even analysis with suitable diagram. [07]

Q.6 A) If the price of a product is ₹ 200/-, TFC is ₹40,000/- and AVC is ₹20/- then calculate: [10]

i) Break even output.

ii) If price falls to ₹. 100/-, at original TFC and AVC, calculate new breakeven quantity.

B) Discuss the uses of Break-even analysis [10]

OR

Q.6 **Write Short Notes: (ANY FOUR)** [20]

- i) Importance of business economics
- ii) Functions and variables
- iii) Cross elasticity of demand
- iv) Producer's equilibrium
- v) Learning curve
- vi) Relationship between AC and MC

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- Note: 1) **ALL** questions are **COMPULSORY**.
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- Q.1 A) **Fill in the blanks with the appropriate options given below: (ANY TEN)** [10]
- i) Profit is one of the _____ objectives of a business firm.
 A) economic B) social
 C) human D) organic

 - ii) Business activities such as product research, quality control, inventory management, etc., are related to _____ function.
 A) Marketing B) Sales
 C) Finance D) Production

 - iii) Firms using _____ strategy concentrate on the current products and markets.
 A) growth B) retrenchment
 C) combination D) stability

 - iv) Business environment is _____ in nature.
 A) static B) systematic
 C) dynamic D) socialistic

 - v) The factors of internal environment are _____ in nature.
 A) non-controllable B) controllable
 C) stable D) sustainable

 - vi) _____ environment relates to different elements of population.
 A) Ecological B) Economic
 C) Political D) Demographics

 - vii) A _____ is a group of countries, which is formed for increasing trade and development of member nations.
 A) trading bloc B) cartel
 C) consortium D) trade association

 - viii) Analysis of _____ environment helps a business firm to identify strength and weaknesses.
 A) National B) Internal
 C) External D) International

 - ix) The _____ frames the corporate strategy of a business unit.
 A) divisional heads B) lower-level management
 C) departmental heads D) top-management

 - x) Proximity to market of a manufacturing plant is required in the case of _____ products.
 A) special B) fragile
 C) luxury D) durable

- xi) _____ is an entrepreneur within an existing organization.
A) Director B) Manager
C) Leader D) Intrapreneur
- xii) Problem of Dual responsibility is one of the _____ related problems of women entrepreneurs.
A) gender B) social
C) business D) psychological

- Q.1 B) **State whether the following statements are TRUE or FALSE: (ANY TEN)** [10]
i) Business firms have social responsibility only towards its employees.
ii) The traditional concept of business places emphasis on customer satisfaction.
iii) Purchase and store keeping is an important element of inventory management.
iv) Analysis of external environment indicates strengths and weaknesses of a firm.
v) Production refers to conversion of inputs into finished goods.
vi) Political stability brings consistency and firmness in Government policies.
vii) There is no need to conduct periodic review of performance.
viii) The project report is of importance only to the entrepreneur.
ix) Law and order situation is an important factor to be considered in plant location.
x) Entrepreneurs place more emphasis on formalities rather than results.
xi) Non-monetary factors include higher salaries, bonus, etc.
xii) Social entrepreneurs act as a change agent for the society.
- Q.2 **Answer ANY TWO of the following:** [15]
A) Explain the various functions of a business.
B) Discuss the steps in setting business objectives.
C) Distinguish between Traditional and Modern Concept of Business.
- Q.3 **Answer ANY TWO of the following:** [15]
A) Explain the significance of business environment.
B) Describe the educational environment and its impact on business.
C) Explain the Functions of WTO.
- Q.4 **Answer ANY TWO of the following:** [15]
A) Explain the steps involved in business planning process.
B) Discuss the contents of project report.
C) Explain various factors determining location.
- Q.5 **Answer ANY TWO of the following:** [15]
A) Outline the characteristics of entrepreneurship.
B) Explain the various types of an entrepreneurs.
C) Explain the qualities of an entrepreneur.
- Q.6 **Write Short Notes on: (ANY FOUR)** [20]
A) Human objectives of a business
B) Positive impact of Globalization
C) Areas of Feasibility Study
D) Internal environment of a business
E) Corporate Social Responsibility (CSR)
F) Problems faced by women entrepreneurs in India

Seat No. _____

Supervisor’s Signature

World Map



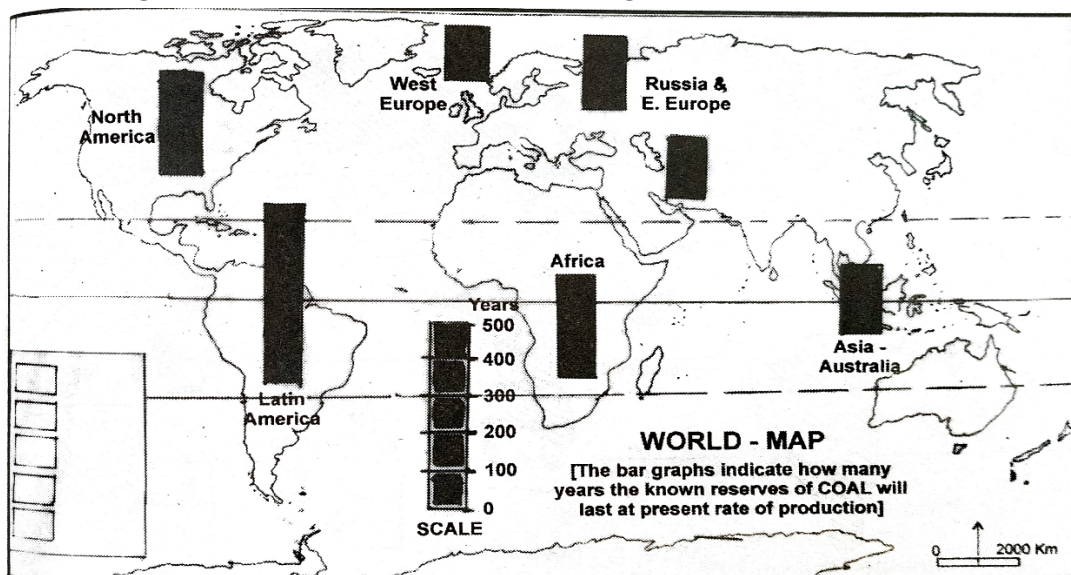
Seat no:

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- Note:
- 1) **ALL** questions are **COMPULSORY**.
 - 2) Figures to the right indicate full marks.
 - 3) Draw maps wherever necessary.
 - 4) Map stencils are permitted.
 - 5) Attach the world map to the main answer sheet.
 - 6) Do not write anything except seat no. on the question paper.

Q.1 A) Read the given map and answer the following question:



- i) What is the theme of the map? [01]
- ii) What is the cartographic technique used to represent the data? [01]
- iii) Two countries where coal reserves will last the longest. [02]
- iv) Two countries where coal reserves are the least. [02]
- v) State the amount of coal reserves in Africa and West Europe. [02]
- vi) Discuss the impacts of Coal reserves exhaustion. [02]

B) On the outline map of the world mark and name the following:

- i) Two deserts [02]
- ii) Two mountains [02]
- iii) Two rivers [02]
- iv) Two tropical rainforests [02]
- v) Two countries with high HDI index [02]

Q.2 Answer the following: (ANY TWO) [20]

- A) Discuss the biotic components of the Environment.
- B) Explain the structure of the Environment.
- C) Dynamism of the Environment – Explain with examples.

Q.3 Answer the following: (ANY TWO) [20]

- A) Account for the significance of Non-Conventional energy resources.
- B) Discuss with examples the various types of resources.
- C) Describe methods of forest conservation.

Q.4 Answer the following: (ANY TWO) [20]

- A) Account for the causes of population growth in India.
- B) Density of population in the world – Explain with examples.
- C) Discuss the impacts of population growth on Environment.

(P.T.O)

Q.5

Answer the following: (ANY TWO)

[20]

- A) How does migration affect the urban environment.
- B) Discuss the characteristics of Smart cities.
- C) Explain Urban Heat Island.

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FYBCOM-I-ATKT-OCT-2025-MATHS & STATS-I

Seat no:	
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Time: 03 hrs.

Max. Marks. 100

- Note: 1) **ALL** questions are **COMPULSORY**.
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 3) Use of simple calculator is allowed.
 4) Graph papers will be provided on request.

Q.1 Attempt the following: (ANY FOUR) [20]

- A) A person purchased 500 shares of a company at market price of Rs. 800 each with a brokerage 2%. Find the total purchase price.
- B) Mr. Atul invested Rs. 5,000 on 1st of every month for 4 months in an SIP of a mutual fund, with N.A.V.s as 35.6, 40.8, 52.2 and 45.9 respectively. Find the average price using the Rupee – Cost – Averaging Method, and compare it with A. M. of prices. The entry load was 2% throughout this period.
- C) Mr. Yasin invested Rs.1,44,288 to purchase 300 shares of a company at market price Rs 480 per share. Find the rate of brokerage.
- D) A person invested Rs. 20,500 in mutual fund at NAV of Rs. 200 and entry load of 2.5%. If the fund declared the dividend of Rs.5 per unit, find the dividend received by him.
- E) A person had 600 shares of a company. He received 1 bonus share for every 5 shares held. Find the number of bonus shares received.

Q.2 Attempt the following: (ANY FOUR) [20]

- A) Solve the following L.P.P. graphically,
 Maximize $Z = 5x + 7y$
 Subject to $2x + 3y \leq 12$,
 $2x + y \leq 8$,
 $x \geq 0, y \geq 0$.
- B) A company can produce two products P & Q. Each product has to go through 3 machines, M1, M2 & M3 in the process of manufacture. The processing time for product P through these 3 machines are 2 hours, 3 hours and 1 hour respectively and that of Q are 4 hours, 2 hours and 3 hours respectively. Total available time for M1 is 50 hours, M2 is 48 hours and that of M3 is 45 hours. The profit per unit of P is Rs. 40 and per unit of Q is Rs. 50. Formulate L.P.P. for above information.
- C) If ${}^nP_5 = 2 {}^nP_3$ find the value of n.
- D) There are 5 boys and 4 girls. A committee of 3 has to be formed. Find number of ways of getting 2 boys and one girl in a committee.
- E) Find the values of ${}^5C_3$ and ${}^5P_3$

Q.3 Attempt the following: (ANY FOUR) [20]

- A) Calculate mean and median for :

Age in years:	10-20	20-30	30-40	40-50	50-60
No. of persons:	8	12	16	9	5

- B) Write a short note on measures of central tendency.
- C) Draw histogram and find mode for the following data:

Class intervals	0-20	20-40	40-60	60-80	80-100
Frequency	4	10	15	18	6

- D) Calculate combined mean and standard deviation for the following data:

	Group – I	Group – II
No. of observations	200	150
Mean	120	100
S.D.	10	20

- E) Calculate quartile deviation and coefficient of quartile deviation for the following data:

Marks:	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students:	6	10	24	20	15	5

Q.4 Attempt the following: (ANY FOUR)

[20]

- A) Define following terms with the help of illustration.

(i) Sample Space (ii) Mutually exclusive Events

- B) A random variable X has probability distribution as follows:

x	1	2	3	4	5
P(x)	0.1	0.2	0.3	0.3	0.1

Hence find (i) E(X) (ii) V(X)

- C) Two cards are drawn randomly from a pack of 52 playing cards. Hence, find probability of getting (i) one spade card and one diamond card (ii) both picture cards.
- D) A lottery ticket is selected from a bunch of 25 lottery tickets numbered 1 to 25. Find the probability that the no. on ticket is divisible by 3 or 4.
- E) In a group of 80 persons, 30 like western music, 40 like Indian music and 10 like both. Find the probability that a person selected at random from this group like at least one of the music.

Q.5 Attempt the following: (ANY FOUR)

[20]

- A) Explain the following briefly:

(i) Maximax Criterion (ii) Laplace Criterion

- B) For the following pay-off table choose best decision using (i) Maximin criterion (ii) Laplace criterion.

	S1	S2	S3	S4
A1	250	400	900	300
A2	450	1000	0	150
A3	600	850	1200	1000

- C) For the following pay-off table choose best decision using Minimax regret criterion.

	S1	S2	S3
A1	10	15	19
A2	35	20	0
A3	6	16	40

- D) A certain product can be sold at Rs.50 whose cost price is Rs.30 per unit. It's demand function is as follows:

No. of units demanded:	5	10	15
Probability:	0.3	0.5	0.2

Any unsold product is worthless on the next day. Choose best decision using EMV.

- E) Write a short note on decision tree.

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