C–2091	Sub. Code
	81021

M.B.A. DEGREE EXAMINATION, APRIL 2024

Second Semester

Integrated Shipping and Logistics

QUANTITATIVE METHODS FOR MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Find the amount if Rs. 3,000 is invested at 20% p.a. for 5 years.

2. Find dy/dx if $y = x^3 + 2x - 3$.

3. Find the range of 17, 2, 7, 27, 15, 5, 14, 8, 10, 24, 48, 10, 8, 7, 18, 23.

4. If $n = 10$, $\Sigma X = 71$, $\Sigma Y = 70$, $\Sigma XY = 527$, $\Sigma X^2 = 555$, $\Sigma Y^2 = 526$. Find the coefficient of correlation between X and Y.

5. State the Axioms of probability.

6. If $P(A) = 1/3$; $P(B) = \frac{1}{2}$ and $P(A \cup B) = 1/6$ find $P(A \cap B)$.

7. What is the use of Graphical Method in LPP model?

8. Define Feasible Region.

9. What are the methods used for finding an initial feasible solution in transportation problem?

10. How to transform maximization assignment problem in to minimization?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Evaluate :

(i) $\int (3x^3 + 7x^2 - 2x + 1)\, dx$

(ii) $\int (x^3 - x^2 + ax + b)\, dx$.

Or

(b) Find the CI; if Rs. 1,000 was invested for 1.5 years at 20% p.a. compounded half yearly.

12. (a) Calculate the Quartile Deviation Q_1 and Q_3 for the following data :

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	8	20	34	46	28	14	10

Or

(b) Calculate Karl-Pearson's coefficient of correlation from the following data :

X	14	16	17	18	19	20	21	22	23
Y	87	78	70	75	66	67	62	58	60

13. (a) In a large consignment of electric bulbs 10% are defective. A random sample of 20 is taken for inspection. Find the probability that (i) all are good bulbs (ii) exactly there are 3 defective bulbs.

Or

(b) A problem in statistics is given to the three students A, B and C whose chances of solving if are 1/2, 3/4 and 1/4 respectively. What is the probability that the problem will be (i) solved (ii) none of them solves if all of them try independently?

14. (a) Solve : Maximize :

$Z = 50x + 15y;\ 5x + y \le 100;\ x + y \le 50,\ x \ge 0,\ y \ge 0$ graphically.

Or

(b) One kind of cake requires 200 g of flour and 25g of fat, and another kind of cake requires 100 g of flour and 50 g of fat. Formulate this LPP model to find the maximum number of cakes that can be made from 5 kg of flour and 1 kg of fat assuming that there is no shortage of the other ingredients, used in making the cakes.

15. (a) Find the initial basic feasible solution for the following transportation problem.

	Destination				Supply
	11	20	7	8	50
Origin	21	16	20	12	40
	8	12	18	9	70
Demand	30	25	35	40	

Or

(b) Determine the critical path and project duration of the project.

Activity	1-2	1-3	2-4	3-4	3-5	4-5	4-6	5-6
Duration (in weeks)	6	5	10	3	4	6	2	9

Part C $(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Integrate the following :

(i) $(x^2 - 4 + 3x)$

(ii) $x^3 + \sin x$

(iii) Differentiate $\sqrt{x}\cos 3x + x^2$ with respect to x.

Or

(b) Find the mean, median and mode of the following data :

Class interval	0-10	10-20	20-30	30-40	40-50
Frequency	10	20	40	20	10

17. (a) Find the regression lines for the following data :

X	25	28	30	35	36	29	34	32
Y	43	48	49	35	30	33	38	41

Or

(b) In a certain factory turning out razor blades, there is a small chance of 0.002 for any blade to be defective. The blades are supplied in packets of 10. Use Poisson distribution to calculate the approximate number of packets containing no defective, one defective and two defective blades respectively in a consignment of 2,00,000 packets.

18. (a) A firm produces two products P and Q. Daily production upper limit is 600 units for total production. But at least 300 total units must be produced every day. Machine hour's consumption per unit is 6 for P and 2 for Q. At least 1200 machine hours must be used daily. Manufacturing costs per unit are Rs. 50 for P and Rs. 20 for Q. Find optimal solution for the LPP graphically.

Or

(b) Solve the following assignment problem

		Job				
		1	2	3	4	5
	A	8	4	2	6	1
	B	0	9	5	5	4
Persons	C	3	8	9	2	6
	D	4	3	1	0	3
	E	9	5	8	9	5

C–2092	Sub. Code
	81025

M.B.A. DEGREE EXAMINATION, APRIL 2024

Second Semester

Integrated Shipping and Logistics

MANAGEMENT INFORMATION SYSTEM

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the characteristics of MIS.
2. Classify Internet business models.
3. Discuss the data processing requirements to prepare a payroll.
4. Write notes on role and characteristics of information.
5. Explain features of DSS.
6. What are the applications of expert systems?
7. Explain EDI.
8. List out the objectives of supply chain Management.
9. Explain information systems security and control.
10. Compare Phishing and Pharming.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Define and explain the term MIS. State its objectives.

Or

(b) Why is MIS looked upon as a strategic need of Management today?

12. (a) Discuss the Strategic and tactical financial information system.

Or

(b) List the activities involved in operational HRIS.

13. (a) Distinguish structured, unstructured and semi-structured DSS.

Or

(b) What are the problems and limitations of expert system?

14. (a) Explain IS Architecture with a neat diagram.

Or

(b) Design a payroll information system.

15. (a) Explain the Contemporary security challenges and vulnerabilities.

Or

(b) List out the ethics to be followed in social networking websites.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the types of Information systems.

Or

(b) Classify functional information system and mention the important decision making areas under each functional information system.

17. (a) With neat sketch explain the architecture, characteristic features and roles of expert system.

Or

(b) Illustrate in detail about forward and backward chaining with suitable example.

18. (a) In managing the business of a restaurant what are some decisions that must be made in the areas of

(i) Strategic planning

(ii) Managerial control

(iii) Operational control.

Or

(b) Explain about the common hacking tactics.

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C–2093	Sub. Code
	81026

M.B.A. DEGREE EXAMINATION, APRIL 2024.

Second Semester

Integrated Shipping and Logistics Management

FUNDAMENTALS OF SHIPPING

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is meant by logistics?
2. Mention the various facets of shipping industry.
3. Define industrial geography.
4. How do you define maritime network?
5. Expand BIMCO.
6. Write short note on HMS Victory.
7. State the role of Indian railways.
8. List out the automobile inventions.
9. What are the main branches in shipping?
10. State any two significance of port authorities.

Part B (5 × 5 = 25)

Answer the questions.

11. (a) Enumerate the scenario of global shipping.

Or

(b) Discuss the ships documents and its relevance.

12. (a) Describe the role of container in shipping.

Or

(b) Write short note on usage of maps and atlas.

13. (a) Narrate the evolution of ships.

Or

(b) Elucidate the parties to shipping.

14. (a) Distinguish between ocean and other means of transports system.

Or

(b) Explain the history of aircrafts.

15. (a) Discuss on various roles of shipping.

Or

(b) Describe the functions of mercantile marine department.

Part C

$(3 \times 10 = 30)$

Answer the questions.

16. (a) Elaborate the future trend in shipping.

Or

(b) Discuss about the India's role in world shipping market.

17. (a) Narrate the advantages of cans and rivers in shipping industry.

Or

(b) Describe the role of international shipping bodies and its functions.

18. (a) Enumerate the steps involved in registration of ships and flags of convenience.

Or

(b) Elucidate the main branches in shipping.

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