Krantiguru Shyamji Krishna Verma Kachchh University, Bhuj
Master of Science (Computer Applications & Information Technology)
Semester: II

Paper Code: FCCS203 **Title of Paper:** Mathematical Foundation of Computer Science-I		**Total Credit :** 4 **Total Marks :** 70 **Time :** 3 Hrs
Unit	**Description**	**Weighting**
I	**Set Theory** Introduction of Set Types of Sets Operations on Sets Venn Diagram Laws related to set theory Numerical based on operations on sets and Venn diagram Application and Importance of Set Theory in Computing Science	**20%**
II	**Matrices** Introduction of Matrix Types of Matrices Operations on Matrices Cramer's Rule Adjoin, Minor and Inverse of a Matrix Solving equation using matrices Determinant of Matrix Application and Importance of Matrices in Computing Science	**20%**
III	**Graph Theory** Introduction of Graph Multi-graph, Degree of vertex Paths , connectivity, sub-graph Connected components, cut points, bridges Special Graphs: complete, regular and bipartite graphs Matrices and Graphs Application and Importance of Graph Theory in Computing Science	**20%**
IV	**Functions** Introduction to Functions Domain and Range Types of Functions Numerical based on functions	**20%**
V	**Elementary Data Analysis** Discrete and continuous frequency distribution, Cumulative Frequency, Distribution, Graphical Representation, Measures of central tendency: Mean, Median, Mode.	**20%**
Basic Text & Reference Books :-		
1.	S.Lipschutz and Marc Lars Lipson : Discrete Mathematics, Schaum's series (Interational edition,1992).	
2.	Vinay Kumar: Discrete Mathematics (BPB Publication, First edition-2002)	
3.	S. C. Gupta, Fundamentals of Statistics, Himalaya Publishing House, 2004.	

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Unit	**Description**		**Total Marks**
I	Q.1 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.2 (B) Medium / Long Questions. (With Internal Option)	08	
III	Q.3 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.3 (B) Medium / Long Questions based on Table Designing. (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Medium / Long Questions. (With Internal Option)	08	
V	Q.5 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.5 (B) Medium / Long Questions. (With Internal Option)	08	