



NAGINDAS KHANDWALA COLLEGE OF COMMERCE, ARTS &
MANAGEMENT STUDIES

AUTONOMOUS COLLEGE

DEPT: MATHEMATICS AND STATISTICS

(A.Y 2016-2017)

Question Paper Pattern

1) Internal Assessment (25%)

a) Class Test – 20 Marks

Duration: 30 Minutes

Section – I (Mathematics)

Topics: Shares and Mutual Funds

i) Attempt Any Two Out of Three (4 Marks each)

ii) Each Main Question includes calculation for more than one part.

Section – II (Statistics)

Topics: a) Measures of Central Tendency

b) Measures of Dispersion

i) Attempt Any Two Out of Three (6 Marks each)

ii) Each Main Question includes calculation for more than one measure

b) 5 Marks for active participation in the class room

2) Semester End Examination (75%)

Marks: 75 Marks

Duration: 2 ½ Hours

Note: i) All questions are compulsory

ii) Attempt any three sub questions from each main question consisting of four sub questions.

iii) Each sub question carries 5 marks.

iv) Graph papers are provided on request and only simple calculator is allowed

In all five main questions based on corresponding five different units of syllabus.

Name and Signature of H.O.D :



Semester I

Course: Mathematical and Statistical Techniques-I

[A] MATHEMATICS: (30 marks)

Unit I: Shares and Mutual Funds

- (a) **Shares:** Concept of share, face value, market value, dividend, equity shares, preferential shares, bonus shares. Simple examples.
- (b) **Mutual Funds:** Simple problems on calculation of Net income after considering entry load, dividend, change in Net Asset Value (N.A.V.) and exit load. Averaging of price under the Systematic Investment Plan (S.I.P.)

Unit II: Permutation, Combination and Linear Programming Problems:

- (a) **Permutation and Combination:** Factorial Notation, Fundamental principle of counting, Permutation as arrangement, Simple examples, combination as selection, Simple examples, Relation between ${}^n C_r$ and ${}^n P_r$ Examples on commercial application of permutation and combination.
- (b) **Linear Programming Problem:** Sketching of graphs of (i) linear equation $Ax + By + C = 0$ (ii) linear inequalities. Mathematical Formulation of Linear Programming Problems upto 3 variables. Solution of Linear Programming Problems using graphical method up to two variables.

[B] STATISTICS: (45 marks)

Unit III: Summarization Measures:

- (a) **Measures of Central Tendencies:** Definition of Average, Types of Averages: Arithmetic Mean, Median, and Mode for grouped as well as ungrouped data. Quartiles, Deciles and Percentiles. Using Ogive locate median and Quartiles. Using Histogram locate mode. Combined and Weighted mean.
- (b) **Measures of Dispersions:** Concept and idea of dispersion. Various measures, Range, Quartile Deviation, Mean Deviation, Standard Deviation, Variance, Combined Variance.

Unit IV: Elementary Probability Theory:

- (a) **Probability Theory:** Concept of random experiment/trial and possible outcomes; Sample Space and Discrete Sample Space; Events, their types, Algebra of Events, Mutually Exclusive and Exhaustive Events, Complimentary events.



