

SARDAR PATEL UNIVERSITY

B.COM SEMESTER: V

Paper code: UB05CCOM23

Title of Paper: **Business Mathematics & Statistics – V**
(TOTAL CREDIT:3) Syllabus will effect from : June 2020

- Objectives: (1) To enhance analytical ability in students for processing data.
(2) To familiarize students with applications of Statistical Techniques in business decision Making.

| UNIT | DESCRIPTION IN DETAIL | WEIGHTAGE |
|------|--|-----------|
| 1 | Discrete Probability Distributions: Probability mass function of Hyper-Geometric distribution, properties and simple applications based on it. Probability mass function of Negative Binomial distribution and Geometric distribution, its properties, uses and simple examples based on it. | [25%] |
| 2 | Theory of Games and Sequencing Problem: Introduction, Assumptions of the Game, Two-person Zero-Sum Games, Pure Strategies (Minimax- Maximin Principles): Games with Saddle Point, Rules to Determine Saddle point, Mixed Strategies: Game without Saddle Point, Principles of Dominance. Solution method for Games without Saddle Point (Algebraic Method only). Sequencing: Introduction, Concept of Sequencing Problem, Processing of N jobs through two machines. Applications of Game theory and Sequencing problems. | [25%] |
| 3 | Demographic Statistics: Meaning, definition and uses of demographic Statistic, Methods of collecting demographic statistics – Registration Method, Census Method and Analytical Method. Mortality rates pertaining to (i) CDR (ii) SDR (iii) IMR, Crude birth rate C.B.R, Fertility rates pertaining to (i)GFR (ii) SFR (iii) TFR. Simple illustrations. | [25%] |
| 4 | Product Control Techniques: Meaning of Product Control Technique and its advantages, Single Sampling Plan, Explanation of the terms: AQL and LTPD, Producer's risk, Consumer's risk, O.C. Curve, ATI, AOQ, AOQL Simple example based on Hyper-Geometric and Poisson distribution. | 25%] |

References:

- (1) Grant E.L.: Statistical Quality Control, McGraw ill.
- (2) Levin and Rubin: "Statistics for Management", Prentice Hall of India Pvt.Ltd.
- (3) Sancheti & Kapoor: Business Mathematics, Sultan Chand & Sons, New Delhi
- (4) Sancheti & Kapoor: Business Statistics. Sultan Chand & Sons, New Delhi.
- (5) Sharma J.K: "Introduction to Operation Research.
- (6) Srivastava O.S.: A Text Book on Demography, Vikas Publishing.
- (7) Sharma J.K: "Introduction to Operation Research.