

B.N.Bandodkar College of Science, Thane.
Additional June 2015
Fourth Semester End Examination (~~March 2015~~)

S. Y. B. Sc. Statistics. (USST403)

Duration: 2 hours and 30 min.

Max. Marks: 75

N.B. 1) All questions are compulsory.

2) Figures to right indicate full marks.

Q.1 a) What are Gantt Charts? What are their strengths and weaknesses? (10)

OR

a) What is a network? Explain the basic steps in network analysis. (10)

b) Define: i) critical event ii) critical path. Explain Fulkerson's rule of numbering the events. (10)

OR

b) Distinguish between : i) activity and event ii) PERT And CPM iii) Slack and Float (10)

Q.2 a) Explain the causes of variation in quality. Explain the basic principle underlying the control charts. (10)

OR

a) Set up \bar{X} & s (σ) chart when i) standards are given ii) standards are not given. How can the standard deviation and mean of process be estimated? (10)

b) Define i) defect & ii) defective. Set up 'C' chart when i) standards are given. ii) Standards are not given. How can the average number of defects be estimated using this chart? (10)

OR

b) What is meant by 'Process Control' & 'Product Control'? Discuss method of stabilization using average sample size in 'P' chart when sample size is variable. (10)

- Q.3 a) Explain following terms with reference to Acceptance Sampling Plan (10)
- i) Acceptance Quality level.(AQL)
 - ii) Rejection Quality level (RQL) or Lot Tolerance Percentage Defective.(LTPD)
 - iii) Process Average Fraction Defective
 - iv) Producer's Risk.
 - v) Consumer's Risk.
 - vi) Operating Characteristic (O.C.) & O.C. Curve.
 - vii) Average Sample Number
 - viii) Average outgoing quality (AOQ) & AOQ Limit.

OR

- a) Describe Single Sampling Plan. Obtain Average outgoing quality (AOQ) & AOQ Limit for this plan. (10)
- b) For Single Sampling Plan. Obtain i) O.C. & O.C. Curve. ii) Producer's Risk.iii) consumer's Risk (10)

OR

- b) Describe double Sampling Plan. Obtain an expression for P_{a1} , probability of accepting a lot on the basis of first sample (10)
- Q.4 a) Explain three different Floats in CPM network. (8)

OR

- a) Explain three different time estimates for activity in a PERT network. (8)
- b) Explain the method of tackling the problem of crashing where time is important. (7)

OR

- b) Explain T_E , T_L and Slack for the event. (7)

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