

B.Sc. (Honours) Examination, 2019

Semester - VI

Statistics

Course : BSC-61

(Statistical Quality Control and Demography)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin

Answer **any four** questions **two** from each group

Group A

1. a) Describe the following terms:
Process control, chance causes, assignable causes, 3σ – limits, control charts
b) Describe, in detail, the construction of control chart for number of defective items 6+4
2. a) Discuss the following concepts in connection with sampling inspection plan:
Consumer's risk, producer's risk, AOQL, OC curve and ASN curve
b) For a single sampling plan, obtain the expressions for the OC and ASN functions. 5+5
3. a) Describe the construction of $(\bar{X}, R)$ chart for varying sample size.
b) Describe the technique of sampling inspection by variables in the normal distribution case. 5+5

Group B

4. Distinguish between –
a) Stable population and stationary population
b) Morbidity incidence rate and morbidity prevalence rate 5+5
 5. a) Prove that $\frac{d}{dx} e_x^0 = \mu_x e_x^0 - 1$, symbols having their usual meaning.
b) What do you mean by the statement: "NRR of a country is 2.7". Explain why NRR is always less than GRR.
 6. Describe the method of fitting a Logistic curve by
a) Rhode's method
b) Fisher's method 5+5
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