

Roll No. _____

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SIIS-198 B-18
B.Sc. IIIrd Semester Degree Examination
MATHEMATICAL STATISTICS
(SQC and Demographic methods)
Paper - III

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) Statistical tables and graph sheets will be supplied on request.

SECTION-A

I Answer the following :

(15×1=15)

- 1) Chance causes of variation.
- a) Can be eliminated b) Cannot be eliminated
- c) Due to known reasons d) None.
- 2) Variable quality is
- a) Measurable b) Not measurable
- c) Both (a) and (b) d) None.
- 3) The control chart for number of defectives is
- a) \bar{X} -chart b) c-chart
- c) p-chart d) s-chart
- 4) For a process to be out of statistical control.
- a) All the points should be out side the control limits.
- b) All the points must be with in control limits.
- c) At least one point must be within control limits.
- d) At least one point must be out side control limits.

- 5) Producers risk is chance of
 - a) Rejecting lot of good quality
 - b) Rejecting lot of bad quality
 - c) Accepting a lot of bad quality.
 - d) None.
- 6) AQL is
 - a) Relatively large fraction defective.
 - b) Relatively small fraction defective.
 - c) Rejectable quality level.
 - d) None.
- 7) Vital registration system helps to
 - a) Known statistical quality
 - b) To know population
 - c) To collect vital statistics
 - d) None
- 8) Infant mortality relates to death of children
 - a) Under 5 years of age
 - b) Under 10 years of age
 - c) Under 1 year of age
 - d) Aged 5 years or more
- 9) In insurance, life table is used to fix
 - a) Salary of employee
 - b) Age of employee
 - c) Premium of Policy holder
 - d) None
- 10) GFR indicates
 - a) Over all birth rate
 - b) Number of birth to per 1000 women
 - c) Number of birth to per 1000 women in the age group 15-49
 - d) None

- 11) Product control achieved through-----
- 12) Most preferred death rate for comparing mortality in two or more population is-----
- 13) -----birth rate is not a probability rate?
- 14) The probability of acceptance in 3σ limits is-----
- 15) Population at any time is estimated by relation-----

SECTION-B

II. Answer any Five of the following **(5×5=25)**

- 16) State the uses of statistical quality control.
- 17) Explain the construction of control chart for fraction defective with the underlying probability law.
- 18) Describe LTPD, AOQ and AOQL.
- 19) Explain the procedure of SSP.
- 20) What is meant by mortality? Define CDR and state its merits and demerits.
- 21) Distinguish between CBR and GFR.
- 22) What are applications of vital statistics?

SECTION-C

III. Answer any Four of the following **(10×4=40)**

- 23) a) Explain two types of causes of variation with their reasons.
b) Discuss the structure of a control chart.
- 24) Describe the construction of mean and range charts.
- 25) Explain the notions and procedure of double sampling plan give its OC and ASN functions.
- 26) Discuss the two methods of standardization of mortality rates with their merits.
- 27) Describe GRR and NRR with their uses.
- 28) Explain various columns of Life table. State the underlying assumptions.