

# Rajiv Gandhi University of Health Sciences

## I Semester Master in Public Health Degree Examination – OCT-2019

[Time: 3 Hours]

[Max. Marks: 100]

### **BIOSTATISTICS**

**Q.P. CODE: 9763**

**(QP contains two pages)**

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary.

#### **LONG ESSAY**

**3 X 10 = 30 Marks**

- Following data depicts the awareness on his/her illness amongst hypertensive patients by gender of patient.

Test whether there is any association between awareness of disease with gender of the patient

| Gender | Yes | No | Total |
|--------|-----|----|-------|
| Male   | 18  | 44 | 62    |
| Female | 12  | 26 | 38    |
| Total  | 30  | 70 | 100   |

Note: Test statistics value for rejection of null hypothesis at  $P=0.05$  is 3.84

- Describe different methods of sampling for a survey in a community.
- In an epidemic situation of a disease in a community, it was estimated that 50% of the population were suffering from the disease. Calculate the probability of three or four persons would be suffering from the disease in household of six persons.

#### **SHORT ESSAY (Answer any ten)**

**10 X 05 = 50 Marks**

- Describe different methods of data collection with their merits and demerits.
- Briefly explain different non-parametric tests of significance used for comparing estimates from samples.
- Following are the Mean and Standard deviation of two sets of data. Interpret which one has higher variability using co-efficient of variation  
Waiting time at Reception counter Mean: 5.5 mts S.D:1.0 mts  
Waiting time for consultation Mean: 30 mts S.D:5.5 mts
- Describe Binomial and Poisson distributions with examples.
- What is the role of sample size in interpretation of estimates from samples? Describe the formula for calculation of sample size for descriptive survey.
- Explain the difference between correlation and regression. Explain their uses in Public health sampling enumeration.
- Define a Sample and Population. Describe differences between population enumeration and sampling enumeration.
- Briefly illustrate any two parametric tests as applicable to comparison of differences between sample estimates in quantitative data.
- Describe systemic and multistage sampling methods.
- What is Life Table? Describe different columns of a Life table.
- Describe different measures of variability.
- Describe different Graphical methods of presentation of data.

#### **OBJECTIVE TYPE (MCQ's, One word, True/False or One/Two Sentence)**

**10 X 02 = 20 Marks**

- Median is used as measure of what?
  - Correlation
  - Scatter
  - Central tendency
  - Trend
- Validity in measurement refers to:

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- a) Truthfulness of data
  - b) Variability of data
  - c) Reproducibility of data
  - d) Authenticity of data
18. Define variance and give example.
19. Life table is an analytical method to understand the survival pattern of population using
- a) Present age specific death rates of the population
  - b) Crude death rate of population
  - c) Overall morbidity rates of the population
  - d) Infant mortality of the population
20. A survey was conducted in a community to understand the perceptions on antenatal care practices 10 antenatal mothers were chosen by the investigator according to his choice. What is the type of sampling followed?
- a) Simple random followed
  - b) Stratified random sample
  - c) Purposive sample
  - d) Systematic random sample
21. Multiple correlation
22. Monitoring and evaluation surveys
23. Qualitative and quantitative data
24. Sample size for survey
25. Interview method of data collection

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