GURUDAS COLLEGE

Internal Examination, 2020

B.Sc Semester-IV, STATISTICS (General)

Paper-CC4/GE-4

Date: 05/12/2020

F.M-50 **Time1.30 hrs**

Group-A (IA)

Answer any five questions. Choose the correct answer. 5x2

1. (a) Which of the following statements best describes the relationship between a parameter and a statistic?

(i) A parameter has a sampling distribution with the statistic as its mean.

(ii)A parameter has a sampling distribution that can be used to determine what values the statistic is likely to have in repeated samples.

(iii) A parameter is used to estimate a statistic.

(iv) A statistic is used to estimate a parameter.

(b) A sampling distribution is the probability distribution for which one of the following:

(i) sample (ii) A sample statistic (iii) A population (iv) A population parameter

(c) The sampling error is defined as:

(i) difference between population and parameter.

(ii) difference between sample and parameter.

(iii) difference between population and sample.

(iv) difference between parameter and sample.

(d) The raw data of Vital Statistics are not obtained from

(i)Census (ii)Vital Statistics Register (iii)Life Table (iv)Hospital Records

(e) The formula for L_x is

(i)$\frac{d_x}{l_x-\frac{1}{2}dx}$ (ii)$\frac{l_x+l_{x+1}}{2}$ (iii)$l_x - 2d_x$

(f) Which among these is a good index of population growth?

(i)GRR (ii)NRR (iii)TFR (iv)IMR

Group-B (Theory)

Answer the following questions (Any three)

2. Discuss the three measures of Fertility - General, Age-Specific and Total Fertility Rates and compare their Merits and Demerits. 6

3.(a) What do you understand by stationary population? 2

(b) Explain why for any community the value of GRR is greater than NRR. 4

4. Obtain an unbiased estimator for the population mean, and derive the variance of the estimator for Stratified Random Sample Scheme. Also, considering the linear cost function obtain the optimum values of the size of the sample for each strata such that for a given total cost the variance is minimum. 6

5. Write a short note about 'Biases in sample survey'. Write down the difference between sampling and complete enumeration. 3+3

1 mark grace

Group-C (Practical)

6. Weights of 4 boys in a team have been recorded (in lbs) as 30, 32, 34 and 36. If a random sample of size 2 is drawn with replacement from them, obtain the sampling distribution of sample mean. Hence find the mean and variance of sample mean. 7

7. Given the following table for l_x, the number of rabbits living at age x, complete the life table for rabbits.

x	0	1	2	3	4	5	6
l_x	100	90	80	75	60	30	0

8