SLR-BN-74

Seat No.	

Set P

B.Com. (Semester - VI) (New) (CBCS) Examination Oct/Nov 2019
Advanced Statistics (Paper – I)

Day & Date: Thursday, 24-10-2019 Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of soundless calculator is allowed.

Q.1 Choose the most appropriate alternatives of the following question. **14**

1) The value of Net Reproductive Rate (NRR) < 1 will result into _____
   a) population remains constant b) reduction in population
   c) increase in population d) none of these

2) The value of Gross Reproductive Rate (GRR) < 1 is indicative of
   a) increase in population b) reduction in population
   c) population remains constant d) none of these

3) The degrees of freedom for statistic t- for paired t- test based on n pairs of observations is _____
   a) n-1 b) 2n-1
   c) 2(n-1) d) None of these

4) For testing population proportions which of the following test to be used
   a) Z-test b) χ^2 test
   c) t- test d) F-test

5) Rejecting H_o when it is false is _____
   a) Type I error b) Type II error
   c) Not committing error d) none of these

6) Student's t-test is applicable when _____
   a) a sample is drawn from normal population
   b) population variance is unknown
   c) the sample size is not large
   d) all of these

7) For testing goodness of fit _____ test is used.
   a) normal b) F
   c) t d) chi-square

8) Any hypothesis which is complementary to the null hypothesis is _____
   a) Simple hypothesis b) Composite hypothesis
   c) Alternative hypothesis d) none of these

9) Whether a test is one sided or two sided depends on _____
   a) Alternative hypothesis b) Composite hypothesis
   c) Null hypothesis d) Simple hypothesis

10) If the null hypothesis of test statistic Z is N(0,1) then for testing against a two sided alternative at α = 0.05, reject H_0 if _____
   a) $|Z| > 1.96$ b) $|Z| < 1.64$
   c) $|Z| < 1.96$ d) none of these

11) The birth rate obtained for a segment of a population is known as _____
   a) specific fertility rate b) crude birth rate
   c) total fertility rate d) none of these

12) Testing $H_0 : \mu = \mu_0$ against $H_1 : \mu \neq \mu_0$ is a _____
   a) right tailed test b) two tailed test
   c) left tailed test d) one of these

13) The T.F.R is _____
   a) The number of children a women will likely bear in her lifetime.
   b) The births to women divided by the female population.
   c) The numbers of birth divided by the total population.
   d) None of these

14) The rate of natural increase in human population is calculated by _____
   a) CBR – CDR = 0 b) CBR – CDR > 0
   c) CBR = CDR d) None of these

Q.2 Answer the following questions. **14**

a) Define crude birth rate and specific fertility rate.

b) Define a null hypothesis and an alternative hypothesis with an example.

Q.3 Attempt the following questions. **14**

a) A group of 50 men and 60 women was asked to indicate their preference between two brands of perfume. The results are as under

	Brand A	Brand B
Men	20	30
Women	10	50

Using a 5 % L.O.S. test the hypothesis that the preference for a particular brand of perfume is not related to sex.

b) Define an F variate and state its p.d.f.

Q.4 Attempt any one of the following question. **14**

a) Explain the terms G.F.R. and T.F.R.

OR

b) Define the terms
i) type I error, ii) type II error, iii) power of the test and iv) L.O.S.

Q.5 Attempt any one of the following question. **14**

a) Explain the procedure to test of goodness of fit.

OR

b) An executive has two secretaries, A and B and is interested whether there is any difference in their typing abilities. Secretary A typed a 10 page report and made an average of 2.6 errors per page with s.d. 0.6. Secretory B typed a 20 page and made an average of 2.3 errors per page with s.d. 0.8. Is there any difference between their performance? use 5% L.O.S.