

U.G. 4th Semester Examination - 2022**STATISTICS****[PROGRAMME]****Course Code : STAT-G-CC-T-1D****(Applied Statistics)**

Full Marks : 50(40+10)

Time : $2\frac{1}{2}$ Hours*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **five** questions: $2 \times 5 = 10$
- a) Mention some sources from where we can obtain vital statistics.
 - b) Write down Edgeworth-Marshall index number formula. Does this formula satisfy any test?
 - c) What is cyclical fluctuation in a time series data?
 - d) What is price relative?

- e) Can you compare the mortality between two different races using CDR? Justify.
 - f) What is consumer price index number?
 - g) In control chart if you see the chart shows some pattern, then what is the indication of it?
 - h) What purpose is served by an index number?
2. Answer any **two** questions: $5 \times 2 = 10$
- a) Why is it necessary to choose proper weights to define an index number?
 - b) What is infant mortality rate? Why is it not a probability rate?
 - c) Define reproduction rates. Explain how far they may be looked upon as indices of population growth rate.
 - d) Why are 3σ control limits mostly used in control charts?
3. Answer any **two** questions: $10 \times 2 = 20$
- a) Discuss some uses of price index number.
 - b) Discuss some methods to remove seasonal fluctuation from the data.

c) Describe ($\bar{X}$, R) chart, when the standards are not given.

d) By starting from a suitable functional form for l_x , deduce that

$$L_x = (l_x + l_{x+l})/2 \text{ and } L_x = (l_x - l_{x+l})/(\ln l_x - \ln l_{x+l})$$

[Internal Assessment: 10]
