Reg. No. : .....

Name : .....

**K19U 3200**

**I Semester B.Sc. Degree (CBCSS- Supplementary/Improvement.)**

**Examination, November-2019**

**(2014 -2018 Admissions)**

**CORE COURSE IN STATISTICS**

**1B01 STA : DESCRIPTIVE STATISTICS**

Time : 3 Hours Max. Marks :48

Instruction: Use of calculator and statistical tables permitted

**PART - A**

**I.** Short answer : Answer all the 6 questions. **(6×1=6)**

1. Give any one definition of Statistics.
2. Write down the scope of Statistics in medical science.
3. What do you mean by census?
4. Define line diagram.
5. Explain deciles.
6. Give the formula for Karl Pearson's correlation coefficient.

**PART - B**

**II.** Short essay : Answer any 7 questions. **(7×2=14)**

7. Distinguish between quantitative and qualitative data..
8. What are the limitations of Statistics?
9. Give an example for misrepresentation of statistical data.

P.T.O.

10. Find the arithmetic mean of the following frequency distribution.

| x | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| F | 5 | 9 | 12 | 17 | 14 | 10 | 6 |

11. Distinguish between absolute and relative measures of dispersion.

12. A student's marks in the laboratory, lecture and recitation parts of a physics course were 71, 78 and 89 respectively. If the weights accorded to these marks are 2,4 and 5 respectively, what is an appropriate average mark?

13. Show that mean deviation is least when measured from the median.

14. Show that correlation coeffient is independent of change of origin and scale.

15. Write a short note on curve fitting.

**PART - C**

**III.** Essay: Answer any **4** questions. **(4×4=16)**

16. Write an essay on history and development of Statistics.

17. Explain interval, nominal and ordinal data with examples.

18. Draw the cumulative frequency curves for the following distribution showing the number of marks of 59 students in Statistics.

| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
|---|---|---|---|---|---|---|---|
| No: of students | 4 | 8 | 11 | 15 | 12 | 6 | 3 |

19. Calculate the median of the distribution of marks obtained by 80 students given below.

| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
|---|---|---|---|---|---|---|
| Frequency | 3 | 9 | 15 | 30 | 18 | 5 |



20.fit a parabola of second degree to the following data.

| X | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Y | 1 | 1.8 | 1.3 | 2.5 | 6.3 |

21. Calculate the correlation coefficient for the following heights (in inches) of fathers (x) and their sons(Y):

| X | 65 | 66 | 67 | 67 | 68 | 69 | 70 | 72 |
|---|---|---|---|---|---|---|---|---|
| y | 67 | 68 | 65 | 68 | 72 | 72 | 69 | 71 |

**SECTION - D**

IV. Long Essay: Answer any **2** questions. **(2×6=12)**

22. Calculate the moment measures of skewness and kurtosis for the following data.

| X | 4.5 | 14.5 | 24.5 | 34.5 | 44.5 | 54.5 | 64.5 | 74.5 | 84.5 | 94.5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Y | 1 | 5 | 12 | 22 | 17 | 9 | 4 | 3 | 1 | 1 |

23. Calculate the quartile deviation and the coefficient measute for the following data.

| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
|---|---|---|---|---|---|---|---|---|
| No: of students | 1 | 8 | 10 | 15 | 12 | 8 | 5 | 1 |

24. Fit an exponential curve of the form $Y = ab^x$ to the following data.

| X | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Y | 1.0 | 1.2 | 1.8 | 2.5 | 3.6 | 4.7 | 6.6 | 9.1 |

25. The ranks of same 16 students in Mathematics and physics are as follows. Two numbers within brackets denote the ranks of the students in Mathematics and physics.

(1,1) (2,10) (3,3) (4,4 ) (5,5) (6,7) (7,2) (8,6) (9,8) (10,11) (11,15) (12,9) (13,14) (14,12) (15,16) (16,13) . Calculate the rank correlation coefficient for proficiencies of this group in Mathematics and physics.