Date:

Registration number:

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BENGALURU-27
B.Sc. STATISTICS – IV SEMESTER (OPEN ELECTIVE)
SEMESTER EXAMINATION: APRIL 2022
(Examination conducted in July 2022)

STOE – 4118: FIRST COURSE IN STATISTICS

Time: 1 ½ Hours **Max: 35 Marks**

*This question paper contains **ONE** printed page and **Three** parts*

Note: Scientific calculators are allowed.
Graphs will be provided on request

PART A

I Answer any FIVE from the following **2 x 5 = 10**

1. Define Statistics. Mention two applications of it in the field of Economics and Biological sciences.
2. Define discrete and continuous variable with an example for each.
3. Differentiate between nominal and ordinal scale with an example for each.
4. A fair coin is tossed five times. Find the probability of obtaining head in at least one of the tosses.
5. Define median. Give its merits and demerits.
6. Define standard deviation. Write down its formula for tabulated data.
7. Define census survey and sample survey with an example.

PART B

II Answer any THREE from the following **5 x 3 = 15**

8. List out the requisites of a good questionnaire.
9. Define Probability. State the addition and multiplication theorem of probability for any two events with the proper notations.
10. Draw a Histogram for the following frequency distribution of heights of students. From the Histogram find the mode of the distribution.

Height (in cms)	140-150	150-160	160-165	165-170	170-180	180-190
No. of Students	5	15	15	20	10	2

11. A) Define coefficient of variation. State its significance. (2)
    B) Define Dispersion. List out the absolute and relative measure of dispersion. (3)
12. The following are the marks of students in Statistics and Mathematics. Find the coefficient of rank correlation and interpret your result.

Marks in Statistics	25	43	27	35	54	61	37	45
Marks in Mathematics	35	47	20	37	63	54	28	40

PART C

III Answer any ONE from the following **10 x 1 = 10**

13. A) For the following frequency distribution, the median is 17.6. Find the missing frequency. (5)

Class Interval	10 – 12	12 – 14	14 – 16	16 – 18	18 – 20	20 – 22	22 – 24
Frequency	2	9	?	25	29	11	5

    B) Explain the different types of correlation with the help of a Scatter diagram and give an example for each type. (5)
14. A) From the following data regarding wholesale and retail price of a commodity, estimate the retail price when the wholesale price is Rs. 240 per quintal. Correlation coefficient between the retail price and the wholesale price is 0.94 (5)

	Wholesale	Retail
Average Price (Rs/Quintal)	200	280
S.D(Rs/Quintal)	20	25

    B) Write a short note on the following:
        i. Simple random sampling
        ii. Stratified random sampling. (5)

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