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(FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2023 ONLY)

SUBJECT CODE

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : NOVEMBER-2023

B.Sc INFORMATION TECHNOLOGY

MAXIMUM MARKS: 75

SEMESTER: I

TIME : 3 HOURS

PART - III

MATHEMATICS – I : STATISTICS

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.(K1)

- The best measure of central Tendency is _____
a) A.M b) G.M c) H.M d) None of the above
- Quartile deviation = _____
a) $Q_3 + Q_2$ b) $Q_3 - Q_1$ c) $\frac{Q_3 - Q_1}{2}$ d) $\frac{Q_3 + Q_1}{2}$
- Which of the following is the highest range of r?
a) 0 and 1 b) -1 and 0 c) -1 and 1 d) None of the above
- 5C_2 is equal to _____
(a) 20 b) 10 c) 30 d) None of the above
- Large sample theory is applicable when _____
(a) $N > 30$ b) $N < 30$ c) $N = 30$ d) None of the above

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

- Define Mode.
- Define Range.
- What is Simple Correlation?
- State Addition Theorem.
- Define Degree of freedom.

(CONTD 2)

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Calculate mean from the following data

Value :	1	2	3	4	5	6	7	8	9	10
Frequency :	21	30	28	40	26	34	40	9	15	57

(OR)

b) Calculate geometric mean of the following:

50 72 54 82 93

12. (a) Calculate the standard deviation from the following data;

14, 22, 9, 15, 20, 17, 12, 11.

(OR)

(b) Calculate the semi interquartile range and quartile coefficient from the following:

Age in years	No. of members
20	3
30	61
40	132
50	153
60	140
70	51
80	3

13. (a) Calculate coefficient of correlation from the following data.

X	12	9	8	10	11	13	7
Y	14	8	6	9	11	12	3

(OR)

(b) Write the types of Correlation.

14.(a) In how many ways can be letters of the word ASSASSINATION be arranged ?

(OR)

b) An urn contains 8 white and 3 red balls. If two balls are drawn at random, find the probability that (i) both are white, (ii) both are red and (iii) one is of each color.

15.(a) Explain with illustration, the concept of

(i) Point estimate

(ii) Interval estimate

(OR)

b) A sample of 1,000 students from Bombay University was taken and their average weight was found to be 112 lbs with a standard deviation of 20 lbs. Could the mean weight of students in the population be 120 pounds ?

(CONTD 3)

/3/

SECTION – C

(5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4/ K5)

16. a) Calculate H.M. of the following data:

Marks:	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency:	15	13	8	6	15	7	6

(OR)

b) The frequency distribution of weight in grams of mangoes of a given variety is given below. Calculate the arithmetic Mean, Median, and Mode.

Weight (in gms.)	No. of mangoes	Weight (in gms.)	No. of mangoes
410-419	14	450-59	45
420-429	20	460-469	18
430-439	42	470-479	7
444-449	54		

17. a) Calculate the Mean deviation from Mean for the following data:

Class interval	2-4	4-6	6-8	80-10
Frequency	3	4	2	1

(OR)

b) Prices of a particular commodity in 5 years in 2 cities are given below:

Price in city A	Price in city B
20	10
22	20
19	18
23	12
16	15

Find confident of variation and find which city had more stable prices.

18.a) A random sample of 5 college students is selected and their grades in Mathematics and statistics are found to be:

	1	2	3	4	5
Mathematics	85	60	73	40	90
Statistics	93	75	65	50	80

Calculate Pearman's rank correlation coefficient.

(OR)

b) Calculate the two regression equations of X on Y and Yon X from the data given below, Taking deviations from actual means of X and Y.

(CONTD 4)

/4/

Price(Rs.)	10	12	13	12	16	15
Amount demanded	40	38	43	45	37	43

Estimate the likely demand when the price is Rs. 20.

19.a) Two card are drawn from a pack of cards at random. Which is the probability that it will be (i) a diamond and a heart (ii) a king and a queen (iii) two kings?

(OR)

b). Tickets are numbered from 1 to 100. They are well shuffled and a ticket is drawn at random.

What is the probability that the drawn ticket has?

- (i)An even number,
- (ii)A number 5 or a multiple of 5,
- (iii)A number which is greater than 75,
- (iv)A number which is a square?

20. a) In a hospital 480 female and 520 male babies were in a week. Do these figures confirm the hypothesis that males and females are born in equal number?

(OR)

b). 4 coins were tossed 160 times and the following results were obtained:

No. of heads:	0	1	2	3	4
Observed frequencies:	17	52	54	31	6

Under the assumption that coins are balanced, find the expected frequencies of getting 0, 1, 2, 3, or 4 heads and test the goodness of fit

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ETHICAL PAPER

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