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(FOR THE CANDIDATES ADMITTED **22UBP4A4**

DURING THE ACADEMIC YEAR 2022 ONLY) **REG.NO.**

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

END-OF-SEMESTER EXAMINATIONS : MAY 2024

BCOM BPS(SF) **MAXIMUM MARKS: 50**

SEMESTER-IV **TIME : 3 HOURS**

PART - III

22UBP4A4 – STATISTICAL METHODS

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

CHOOSE THE BEST ANSWER (K1)

1. The origin of the word statistics has been derived from the Italian word_____
   (a) Status (b) statista (c) statistique (d) statistik
2. In positively skewed frequency distribution the value of mean is always ____ than mode.
   (a) Less (b) equal (c) greater (d) any of thesse
3. The pictorial representation of correlation is_____
   (a) Scatter diagram (b) Histogram (c) bar diagram (d) pie diagram
4. Index numbers always represent in _____
   (a) Average (b) range (c) median (d) percentage
5. That the habits of the people is an example of _____
   (a) Secular trend (b) seasonal fluctuations
   (c) cyclical fluctuations (d) Irregular variation

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. Which type of graph is used in time series?
7. Define range.
8. What is the simple Correlation?
9. Write the meaning of Fisher's Index number.
10. Interpret Sampling error.

(CONTD …. 2)

SECTION – B (5 X 3 = 15 MARKS)

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

11. a) List the types of frequently used diagrams

(OR)

b) Find the median from the following table

No of cars soled in a day	10	15	17	18	21
No of days	4	16	12	5	3

12. a) Weekly wages of a labourer given below. Calculate the third quartile.

Weekly wage (Rs)	100	200	400	500	600
No of weeks	5	8	21	12	6

(OR)

b) Calculate the standard deviation from the following data

No. of Goals	0	1	2	3	4	5
No. of Matches	1	2	4	3	0	2

13. a) Calculate the coefficient of correlation by concurrent deviation method.

Exports (Rs. in croes)	17	12	25	41	32	51
Imports (Rs. in croes)	12	15	23	32	28	26

(OR)

b) Given the Regression lines as $3X + 2Y = 26$ and $6X + Y = 31$. Find the arithmetic means of the variables X and Y.

14. a) From the following data, construct an index for 1995 taking 1994 as base using GM.

Commodities	A	B	C	D	E
Price in 1994 (Rs)	50	40	80	110	20
Price in 1995 (Rs)	70	60	90	120	20

(OR)

b) Construct the cost of living index, for 2000 taking 1999 as the base year

Article	A	B	C	D	E	F
Quantity in 1999 (KG)	6	1	6	4	2	1
Price in 1999 (Rs)	5.75	5.00	6.00	8.00	2.00	20.00
Price in 2000 (Rs)	6.00	8.00	9.00	10.00	1.80	15.00

ETHICAL PAPER

(CONTD …. 3)

15. a) Draw a trend line by the method of semi averages.

Year	1987	1988	1989	1990	1991	1992	1993
Production	90	110	130	150	100	150	200

(OR)

b) Calculate 5 yearly moving average of number of students studying in a commerce college as shown by the following figures.

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Production	332	311	357	392	402	405	410	427	405	438

SECTION – C (5 X 5 = 25 MARKS)

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

16. a) Calculate the arithmetic mean.

Minimum temperature	-10 - -5	- 5 - 0	0 – 5	5 - 10	10 – 15	15 - 20	20 – 25
No. of days	7	21	42	77	103	75	40

(OR)

b) Calculate the geometric mean and Harmonic mean .

Marks	20	21	22	23	24	25
No of students	4	2	7	1	3	1

17. a) The following is the distribution of marks of 80 students of the class. Find the standard deviation.

Marks	0 - 10	10 - 20	20 - 30	30 - 40	40 – 50
No. of students	12	13	21	19	15

(OR)

b) Calculate Bowley's coefficient of skewness

No of students per family	0	1	2	3	4	5	6
No of families	7	10	16	25	18	11	8

18. a) Compute the coefficient of correlation between X and Y

X	10	12	18	8	12	20	22	15	5	17
Y	88	90	94	86	87	92	96	94	88	85

(OR)

b) Find the correlation coefficient from the regression lines 9X – 3Y = 165 and 3X - 4Y=40.

19. a) Compute Laspeyre's and Paasche's index numbers from

Item	Price		Quantity	
	Base year	Current year	Base year	Current year
A	6	10	50	50
B	2	2	100	120
C	4	6	60	60
E	10	12	30	25

(OR)

b) Compute Fisher's index numbers from

Item	1998		1999	
	Price	Quantity	Price	Quantity
A	4	6	2	8
B	6	5	5	10
C	5	10	4	14
E	2	13	2	19

20. a) Calculate 6 yearly centered moving averages from the data

Year	1985	1986	1987	1988	1989	1990	1991	1992
Sales	10	12	13	15	14	14	16	18
Year	1993	1994	1995	1996	1997	1998	1999	2000
Sales	22	24	26	29	25	21	25	27

(OR)

b) Fit a straight line trend equation to the following data by the method of least squares.

Year	1979	1980	1981	1982	1983
Sales	100	120	140	160	180

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