1425

MBA 1st Semester Examination

Business Statistics (N.S.)

MBA-102

Time : 3 Hours   Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

SECTION - A

Attempt all questions.

1. (a) What do you mean by dispersion? What are the different measures of dispersion?

    (b) What is the relationship between correlation coefficients and regression coefficients?

    (c) Explain components of time series.

    (d) What are mutuvally exclusive event's and equally likely event's?

    (e) State where Poisson distribution can be applied.

    (f) Null hypothesis.

    (g) Sampling errors.

    (h) F-test applications.

    (i) Type-I error.

    (j) Unbaiasedness.   **(10×2=20)**

SECTION - B

Attempt any four questions.

2. The arrivals at an outpatient counter of a corporate hospital are found to have the following time distribution. Find arithmetic mean, mediun, mode and standard deviation. What are your comment's?

Time (Marks)	11-13	13-15	15-17	17-19	19-21	21-23	23-25
No. of patients	6	53	85	56	26	16	8

3. Calculate the lower and upper quartiles and third decile from following data.

Central value:	2.5	7.5	12.5	17.5	22.5
Frequency:	7	18	25	30	20

4. A sales manager collected the following data on annual sales and years of experience.

Sales persons	Years of experiences	Annual Sales (1000's)
1	1	80
2	3	97
3	4	92
4	4	102
5	6	103
6	8	111
7	10	119
8	10	123
9	11	117
10	13	136

5. Eleven cities are ranked according to their pollution levels and occurrence of pulmonary diseases. Is there any relation between pollution and pulmonary disease? Comment on the findings.

City	Pollution	Pulmonary Disease
A	4	5
B	7	4
C	9	7
D	1	3
E	2	1
F	10	11
G	3	2
H	5	10
I	6	8
J	8	6
K	11	9

6. You are given the annual profit figure for a certain firm for the year 2000-2007. Fit a straight line trend to the data and estimate the expected profit for the year 2010.

Year:	2000	2001	2002	2003	2004	2005	2006	2007
Profit (lakh):	60	72	75	95	80	85	95	104

7. Enumerate the procedure involved in the testing of hypothesis.

(4×5=20)

SECTION - C

Attempt any two questions.

8. Define a Poisson distribution. Discuss some business and economic situation's where Poissons probability model is appropriate.

[P.T.O.]

9. The average daily sales of 500 branch offices was 150,000 and the standard deviation 15,000. Assuming the distribution to be normal, indicate how many branches have sales between.

    (i)   1,20,000 and 1,60,000

    (ii)   Below 1,40,000 and

    (iii) More than 1,65,000.

10. A coin is tossed 900 times and heads appear 490 times. Does this result support the hypothesis that the coin is unbiased?

11. Weights in kgm of 10 students are given below:

38, 40, 45, 53, 47, 43, 55, 48, 52, 49. Can we say that variance of distribution of weights of all student's from which the above sample of 10 students was drawn, is equal to 20 square kg?

Degrees of freedom	χ^2 0.05	χ^2 0.01
	16.92	21.67
	18.31	23.21

(10×2=20)