

D3BSM2303

Reg. No.....

Name:

THIRD SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024

(Regular/Improvement/Supplementary)

BSM

GBSM3B05T: BUSINESS STATISTICS

Time: 2 ½ Hours
80

Maximum Marks:

SECTION A: Answer the following questions. Each carries *two* marks.

(Ceiling 25 Marks)

1. State the importance and scope of statistics.
2. What is correlation?
3. What is standard error?
4. Define hypothesis.
5. What is forecasting?
6. Comment on inferential statistics.
7. Write a short note on scatter diagram.
8. State the difference between statistics and parameter.
9. What is critical region?
10. Highlight the concept of sampling from finite population.
11. What is quartile deviation?
12. Comment on Karl Pearson’s coefficient correlation.
13. What is sampling?
14. List the importance of time series analysis.
15. What is estimation?

SECTION B: Answer the following questions. Each carries *five* marks.

(Ceiling 35 Marks)

16. Define and explain the types of skewness.
17. Explain the difference between z -test and t-test.
18. Define and explain the types of error in research.
19. Eleven students were rated for their personality by a panel of judges and their ranks were obtained. Rank 1 represents the poorest personality and rank 11 represents an excellent personality of an individual. Further, the IQ score of these students was also recorded. The data so obtained are shown below:

Personality	1	2	3	4	5	6	7	8	9	10	11
IQ	84	82	85	81	67	78	68	45	81	72	56

Compute the rank order correlation from the data.

20. Fit a freehand smooth curve representing the following data:

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Sales	60	85	95	70	80	105	120	130	90	100	145

21. From the following observations, draw a scatter diagram and comment on it.

X	1	2	3	4	5	6	7	8	9
Y	8	5	1	7	3	2	9	6	4

22. The authorities have observed that the use of two wheelers in the college campus spoils the atmosphere. A study was conducted to know the responses of boys and girls towards banning the use of two wheelers in the college campus. The responses of the students are shown in the following table.

	RESPONSES		
		Agree	Disagree
Gender	Male	20	40
	Female	50	10

Apply Chi square and test your hypothesis at 1% level (6.6350).

23. Explain the need for sampling distributions.

SECTION C: Answer any two questions. Each carries ten marks.

24. To investigate the impact of age on sleep duration, a study was conducted in which the subjects in the three different ages were asked about their average sleep hours per. day. The following are the data obtained in the study.

Data of sleep hours in different age categories

SL.NO	12 Years	16 years	20 Years
1	7	6	6
2	8	7	6
3	9	6	7
4	6	5	4
5	8	6	5
6	7	5	4
7	8	6	5
8	9	5	4
9	8	6	7

10	7	5	5
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Apply one-way analysis of variance and test whether these data confirm that the average sleep hour is not same in all the age categories. Test your hypothesis at 5% level ($F=3.35$).

25. Calculate five year moving average for the following data.

Year	Production
1977	14
1978	17
1979	22
1980	28
1981	26
1982	18
1983	29
1984	24
1985	25
1986	29
1987	30
1988	23

26. From the given data calculate regression equation

X	1	3	5	7	9	4	6
Y	2	4	3	7	5	6	1

27. Find the quartile deviation from the following data

Class interval	150-155	155-160	160-165	165-170	170-175	175-180	180-185
Frequency	4	5	10	15	20	5	1

(2 x 10 = 20 Marks)

