D2BCP2305   (PAGES 2)   Reg.No.............................

Name: ....

SECOND SEMESTER UG DEGREE EXAMINATION, APRIL 2024

(Regular/Improvement/Supplementary)

B. Com Professional

GBCP2B08T: QUANTITATIVE TECHNIQUES FOR BUSINESS

Time: 3 Hours   **Maximum Marks: 80**

PART A: Answer *all* the questions. Each carries *one* mark.
Choose the correct answer.

1. The correlation co-efficient ranges from.............................

   A) 0 to 1   B) -1 to 0   C) -1 to +1   D) -2 to +1

2. Normal distribution is...........................
   A) Discrete.   B) Individual.   C) Continuous.   D) Binomial.
3. Statistical measure derived from population is.....................
   A) Parameter.   B) Statistic.   C) Sampling distribution.   D) Standard error.
4. The mean of binomial distribution is ....
   A) mp   B) np   C) m   D) 1-p
5. The statistical measure which implies cause – effect relationship is ....
   A) Correlation.   B) Regression.   C) Probability.   D) Time series.

Fill in the Blanks.

6. Rank correlation is developed by...................
7. .... is defined as the number of independent observations.
8. The standard deviation of sampling distribution is called.................
9. ANOVA stands for.........................
10. Degree of freedom in case of test of independence case of chi-square test is..............

(10 x 1 = 10 Marks)

PART B. Answer any *eight* questions. Each carries *two* marks.

11. What is probability?
12. What is binomial distribution?
13. Define regression analysis.
14. Give the formula for computing probable error.
15. What is null hypothesis?
16. What is conditional probability?
17. What are non-parametric tests?
18. What is Type I error?
19. What is the probability of getting at least one head when 3 coins are tossed?
20. In how many ways, 3 seats can be occupied by 5 students?

(8 x 2 = 16 Marks)
(PTO)

PART C: Answer any *six* questions. Each carries *four* marks.

21. Distinguish between census survey and sample survey.
22. How regression analysis differ from correlation analysis?
23. Out of 500 items selected for inspection, 0.2% is found to be defective. Find how many lots will contain exactly no defective, if there are 1000 lots. (Assume Poisson distribution)
24. Calculate Karl Pearson's correlation co-efficient from the following data.

X	78	89	97	69	59	79	68	61
Y	125	137	156	112	107	136	123	108

25. A sample of 1000 students from a university was taken and their average weight was found to be 112 pounds with a standard deviation of 20 pounds. Could the mean weight of students in the population be 120 pounds?
26. Compare discrete and continuous probability distribution.
27. The weekly wages of 1000 workmen are normally distributed with a mean of 70 and a standard deviation of 5. Estimate the number of workers whose wages will lie between 69 and 72.
28. A stenographer claims that she can take dictations at the rate of more than 120 words per minute. Out of 12 tests given to her, she could perform an average of 135 words with a standard deviation of 40. Is her claim valid?

(6 x 4 = 24 Marks)

PART D: Answer any *two* questions. Each carries *fifteen* marks.

29. Explain the application of quantitative techniques in business.
30. Your are given the following data about advertising and sales.

Details	Advertising (Rs in Lakhs)	Sales (Rs in Lakhs)
Mean	10	90
Standard Deviation	3	12
Correlation Co-efficient	0.8	

Calculate:

   a. Calculate two regression equations.
   b. Find the likely sales when advertising expenditure is Rs 15 lakhs.

31. Below are given the yield (in kg) per acre for 5 plots of 4 varieties of treatment:

Plot Nos.	Treatments			
	I	II	III	IV
1	42	48	68	80
2	50	66	52	94
3	62	68	76	78
4	34	78	64	82
5	52	70	70	66

   Carry out analysis of variance.

(2 x 15 = 30 Marks)