

23U255

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Name:

Reg. No:

SECOND SEMESTER B.Com. PROFESSIONAL DEGREE EXAMINATION, APRIL 2024

(CUCBCSS-UG)

(Regular/supplementary/Improvement)

CC17U BCP2 B08 – QUANTITATIVE TECHNIQUES FOR BUSINESS

(Core Course)

(2017 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

PART A

Answer *all* questions. Each question carries 1 mark.

1. The coefficient of correlation: -
(a) has no limits (b) can be less than 1
(c) can be more than 1 (d) varies between +1 and -1
2. The standard deviation of binomial distribution is
(a) \sqrt{npq} (b) npq (c) $n^2p^2q^2$ (d) np
3. Large sample theory is applicable when
(a) $N > 30$ (b) $N < 30$ (c) $N = 30$ (d) None of these
4. The Chi-square test was devised by
(a) Fisher (b) Gauss (c) Laplace (d) Karl Pearson
5. Data originally collected for an investigation is called
(a) Discrete data (b) Secondary data (c) Primary data (d) Continuous data
6. When $r=1$, the two regression lines -----
7. If A and B are mutually exclusive events, then $A \cap B =$ -----
8. An empty set can be denoted by -----
9. The sampling errors usually ----- with increase in sample size.
10. The standard deviation of sampling distribution is called -----

(10 × 1 = 10 Marks)

PART B

Answer any *eight* questions. Each question carries 2 marks.

11. What are the functions of quantitative techniques?
12. What is meant by scatter diagram?
13. Explain the properties of regression coefficients.
14. Write a short note on level of significance.

(1)

Turn Over

15. What do you mean by probability?
16. What is meant by ANOVA?
17. What is non probability sampling?
18. In a question of correlation, the value of r is 0.917, and its PE is 0.034, what would be the value of N?
19. If $b_{yx} = .83$, $\sigma_x = 20$, $\sigma_y = 12$, find r.
20. What is the probability that a leap year selected at random, will contain 53 Sundays?

(8 × 2 = 16 Marks)

PART C

Answer any *six* questions. Each question carries 4 marks.

21. Explain the uses of quantitative techniques in business and industry.
22. Explain the procedure of testing hypothesis.
23. Find Spearman's rank coefficient of correlation from the following data.

X	50	66	34	21	15	79	42
Y	64	53	41	17	73	29	31

24. You are given the following data.

	X	Y
Arithmetic mean	36	85
Standard Deviation	11	8
Coefficient of correlation between X and Y	0.66	

- (i) Find the two regression equations.
 - (ii) Estimate the value of X when Y=75.
25. A ball is drawn at random from a box containing 6 red balls,4 white balls and 5 blue balls. Determine the probability that it is
 - (a) Red
 - (b) White
 - (c) Blue
 - (d) Not Red
 - (e) Red or White
 26. The mean weight of 500 male students in a certain college is 151 lbs and the standard deviation is 15 lbs. Assuming the weights are normally distributed find how many students weigh
 - (a) Between 120 and 155 lbs
 - (b) More than 185 lbs
 27. The mean height obtained from a random sample of size 100 is 64 inches. The standard deviation of the distribution of height of the population is known to be 2 inches. Test the statement that the mean height of the population is 67 inches at 5% level of significance.
 28. In a survey of 200 boys, of which 75 were intelligent,40 had educated fathers, while 85 of the unintelligent boys had uneducated fathers. Do these figures support the hypothesis that educated fathers have intelligent boys?

(6 × 4 = 24 Marks)

PART D

Answer any *two* questions. Each question carries 15 marks.

29. From the following data, obtain the two regression equations and correlation coefficient.

Sales	:	91	97	108	121	67	124	51	73	111	57
Purchase	:	71	75	69	97	70	91	39	61	80	47
30. The following data gives the number of accidents in a 50 days period during which automobile accidents occurred in a certain part of a city. Fit a Poisson Distribution to the data

No of accidents	0	1	2	3	4
No of days	19	18	8	4	1

31. The following figures related to the number of units sold in five different areas by four salesmen

Areas	Number of units			
	A	B	C	D
1	80	100	95	70
2	82	110	90	75
3	88	105	100	82
4	85	115	105	88
5	75	90	80	65

Is there a significant difference in the efficiency of these salesmen?

(2 × 15 = 30 Marks)
