B.Com. DEGREE (C.B.C.S.S.) EXAMINATION, MAY 2013

Second Semester

Core Course IV—QUANTITATIVE TECHNIQUES FOR BUSINESS RESEARCH

(Common for Model I, Model II and UGC sponsored B.Com. degree programmes)

(Prior to 2012 Admissions)

Time : Three Hours   Maximum Weight : 25

*Answers may be written **either** in English **or** in Malayalam.*

Section A

This section consists of four bunches of four questions each.
Each bunch carries a weight of 1.
*Answer **all** questions.*

I. Choose the correct answer from the choices given below :

1. The range of simple correlation coefficient is :

   (a) O to ∞.   (b) $-\infty$ to ∞.

   (c) 0 to 1.   (d) -1 to 1.

2. Correlation between the number of shoes produced and the steel produced a year is :

   (a) Non sense correlation.   (b) spurious correlation.

   (c) Meaningless correlation.   (d) All the above.

3. A card is drawn from a pack of 100 cards, each numbered 1 to 100. Then the probability of drawing a number greater than 90 is :

   (a) 90/100.   (b) 1/10.

   (c) 11/100.   (d) 9/100.

4. when $A \cap B = \phi$, A and B are :

   (a) Independent.   (b) Mutually exclusive.

   (c) Complementary.   (d) Intersecting.

II. Fill in the blanks :

5. Probability of type I error is called ————.

6. If $byx = -0.9$, $bxy = -0.4$, then $r =$ ————.

7. If $r = 0.6$ and $n = 64$, probable error is ————.

8. ———— is a method of data collection in which information is collected from all individuals is the population.

Turn over

III. State whether the following statements are true or false :

9. Enumerators carry the questionnaire personally to the respondents.

10. Exploratory research is also called basic research.

11. Poisson distribution has been called probability distribution of rare events.

12. Research report is the first step in a research work.

IV. Match the following :—

13. Chi-square test	(a)	Rejecting a true hypothesis.
14. Type II error	(b)	Population.
15. List of books referred in research	(c)	Goodness of fit.
16. Universe	(d)	For predicting an unknown value.
	(e)	Accepting false hypothesis.
	(f)	Footnotes.

$(4 \times 1 = 4)$

Section B

Answer any **five** *questions.*
Each question carries a weight of 1.

17. What are mutually exclusive events ?

18. What is stratified sampling ?

19. Explain descriptive research.

20. State the meaning of hypothesis.

21. What is Probable error ?

22. What do you mean by bibliography ?

23. Explain the meaning of theoretical distributions.

24. What is meant by law of Inertia ?

$(5 \times 1 = 5)$

Section C

Answer any **four** *questions.*
Each question carries a weight of 2.

25. What are the differences between correlation and regression ?

26. A bag contains 3 white, 4 black and 5 red balls. Three balls are drawn at random one after another without replacement. Find the probability that the first is white, second is black and the third ball is red.

27. The number of accidents occurred during a week are 14, 16, 8, 12, 11, 9 and 14. Find whether the accidents are uniformly distributed over the week.

28. If 3% of electric bulbs manufactured by a company are defective, find the probability that in a sample of 100 bulbs, exactly 5 bulbs are defective.

29. What are the properties of binomial distribution ?

30. Briefly explain research process.

$(4 \times 2 = 8)$

Section D

Answer any two questions.
Each question carries 4 marks.
Answer should not exceed 4 pages each.

31. The following data shows the maximum and minimum temperature on 1st January 2012 at 10 important cities in India.

    Maximum temperature : 29 23 25 15 27 29 24 31 32 35

    Minimum temperature : 8 3 7 5 8 19 10 7 5 8

    (a) Fit a regression line of x on Y and Y on x.

    (b) Estimate the maximum temperature when the minimum temperature is 12.

    (c) Estimate the minimum temperature when the maximum temperature is 40.

32. Ten competitors in a beauty contest are ranked by three judges in the following order :—

    1st Judge : 1 6 5 10 3 2 4 9 7 8

    2nd Judge : 3 5 8 4 7 10 2 1 6 9

    3rd Judge : 6 4 9 8 1 2 3 10 5 7

    Which pair of judges has nearest approach to common tastes in beauty ?

33. The odds against Anil solving a problem are 5.4 and the odds in favour of Binoy solving the same problem are 3.7. Find the probability that :

    (a) Both Anil and Binoy solve the problem.

    (b) The problem is not solved if they try independently.

    (c) The problem is solved by at least one.

$(2 \times 4 = 8)$