C 61157

FOURTH SEMESTER B.Com. DEGREE EXAMINATION, APRIL 2017

(CUCBCSS - UG)

Complementary Course

BCM 4C 04 - QUANTITATIVE TECHNIQUES FOR BUSINESS

Time : Three Hours   Maximum : 80 Marks

Part A

Answer **all** Questions (Each question carries 1 Mark).

Choose the correct answer :

1. Mean of Binomial distribution is :
    (a) np.
    (b) npq.
    (c) n.
    (d) $\sqrt{npq}$.

2. If the occurrence of one event prevents the possibility of occurrence of others, such events are known as :
    (a) Exhaustive events.
    (b) Uncertain events.
    (c) Mutually exclusive events.
    (d) Independent events.

3. When the amount of change in one variable leads to a constant ratio of change in the other variable, correlation is said to be :
    (a) Linear.
    (b) Non-linear.
    (c) Positive.
    (d) Negative.

4. Degrees of freedom for variance within samples is :
    (a) k - 1.
    (b) N - k.
    (c) N - 1.
    (d) None of the above.

5. The distribution which is known as 'the law of improbable events' :
    (a) Poisson distribution.
    (b) Binomial distribution.
    (c) Normal distribution.
    (d) All the above.

Fill in the blanks :

6. Rejecting a null hypothesis when it is true is called _____ error.

7. Normal distribution was discovered by _____.

8. The test applied for large sainples is _____.

9. The tendency of two or more groups or series of items to vary together directly

   or inversely _____.

10. In case of independent events p (A ∩ B) = _____ .

<div align="right">(10 x 1 = 10 marks)</div>

Part B

Answer any **8** questions from the following (Each question carries 2 Marks).

11. What is Rank correlation ?

12. Define Binomial distribution?

13. When Poisson distribution is treated as a limited form of binomial distribution ?

14. What is standard normal variate ?

15. What are statistic and parameter?

16. Explain standard error?

17. What is meant by analysis of variance ?

18. What you mean by non-parametric tests ?

19. When the Yates correction is used in x^2 test ?

20. What is statistical hypothesis ?

<div align="right">(8 x 2 = 16 marks)</div>

Part C

Answer any **6** questions from the following (Each question carries 4 Marks).

21. Explain the differences between correlation and regression.

22. P(A) = 1/13, P (B) = 1/4 and P(A ∪ B) = 4/13. Find P(A ∩ B).

23. A car hire from has two cars, which it hires out day by day. The number of demand for car on each day is distributed as a Poisson variate with mean 1.5. Calculate the proportion of days on which
    (i) neither car is used ; (ii) Some demand is refused.

24. Explain the use of x^2 test.

25. A sample of size 400 was drawn and the sample mean was found to be 99.Test whether this sample could have come from a normal population with mean = 100 and S.D = 8 at 5% level of significance.

26. Explain the properties of Normal curve.

27. Four dice are thrown 162 times: The occurrence of 2 or 3 is considered as success. In how many throws do you expect,
    (i) exactly 2 success ; (ii) at least 1 success.

28. A bag contains 8 balls identical except for colour of which 5 are red and 3 white. A man draws 2 balls at random one after another without replacement. What is the probability that one of the ball drawn is white and the other red ? What would be the probabilities if ball drawn were replaced before another ball is drawn ?

(6 x 4 = 24 marks)

Part D

Answer any **2** questions from the following (Each question carries 15 Marks).

29. The following figures relate to the number of units sold in 5 different areas by the sales personnel of a firm. Test whether all the four sales personnel's were performed equally.

Area	Salesman (Units sold)			
	A	B	C	D
1	80	100	95	70
2	82	110	90	75
3	88	105	100	82
4	75	90	80	65
5	85	115	105	88

30. Fit a Binomial distribution to the data relating to the number of seeds germinating out of 10 damp filter 80 sets of seeds :

No. of seeds germinated	0	1	2	3	4	5	6	7	9	10
No. of sets	6	20	28	12	8	6	0	0	0	0

31. The sales data of 6 shops before and after a special promotional campaign are given below :

Shops	Sales (before) Rs. in 000's	Sales (after) Rs. in 000's
A	42	47
B	50	60
C	48	55
D	53	58
E	28	32
F	31	38

Can the campaign be judged as success ?

(2 x 15 = 30 marks)