C 62734 (Pages : 2) Name..............................

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SECOND SEMESTER B.C.A. DEGREE EXAMINATION, MAY 2014

(UG—CCSS)

Complementary Course

CA 2C 03—COMPUTER ORIENTED STATISTICAL METHODS

Time : Three Hours   Maximum : 30 Weightage

Part I

Answer **all** *twelve questions.*
Each question carries a **weightage** *$01\frac{1}{4}$.*

1. The sum of squared deviations of a set of values is minimum when the deviations are taken from :

   (a) A.M.   (b) Median.

   (c) Mode.   (d) G.M.

2. The limiting relative frequency approach of probability is known as :

   (a) Axiomatic probability.   (b) Statistical probability.

   (c) Classical probability.   (d) A priori probability.

3. If X is a random variable with mean t, then E $(X-\mu)$ is called :

   (a) r raw moment.   (b) Variance.

   (c) r central moment.   (d) Mgf.

4. Power of a test is related to :

   (a) Type I error.   (b) Type **II** error.

   (c) Both type I and II errors.   (d) Level of significance.

5. As the sample size increases, the standard error of sample mean :

   (a) Remains constant.   (b) Decreases.

   (c) Increases.   (d) Increases proportionately.

• 6. The correlation coefficient between X and Y is **1** and regression coefficient of Y on X is 2, then the regression coefficient of X on Y is ————

7. The value which divides a set of observations into halves is called ————

8. The diagram obtained by plotting points (X, Y) in a plane is called ————

9. Three events A, B, C are disjoint and their union is the sample space. Then A, **B,** C are ———— events.

10. Mean and variance of a Poisson distribution are ————

Turn over

11. Write the relation between mean, median and mode of a normal distribution.

12. The mean of a Chi-square distribution with degree of freedom n is ————

$$(12 \times \tfrac{1}{4} = 3 \text{ weightage})$$

Part II

*Answer **all** nine questions.*
Each question carries 1 weightage.

13. Find the AM of first **10** natural numbers.

14. What is scatter diagram ?

15. Define random experiment. Give an example.

16. Define mutually exclusive events. Give an example.

17. Define random variable. Give an example.

18. Define probability mass function. Write its properties.

19. Distinguish between Statistic and Parameter.

20.. What do you mean by sampling distribution ? Give an example.

21. Define significance level.

$$(9 \times 1 = 9 \text{ weightage})$$

Part III

*Answer any **five** questions.*
Each question carries 2 weightage.

22. What is an average ? What are the properties of a good average ?

23. What are the two regression lines ? State their significance.

24. Give the classical definition of probability. What are the limitations of this definition ?

25. State addition theorem on probability for any *two* events. Modify it (i) when the events are disjoints (ii) when the events are independent.

26. A fair coin is tossed 5 times. What is the probability of getting exactly 2 heads ?

27. Give the relation between first three central moments and raw moments.

28. Define maximum likelihood estimator.

$$(5 \times 2 = 10 \text{ weightage})$$

Part IV

*Answer any **two** questions.*
Each question carries 4 weightage.

29. How do you fit the line $Y = A + BX$.

30. Define mathematical expectation. What are the properties of mathematical expectation ? Show that $E(XY) = E(X) E(Y)$, if X and Y are independent.

31. Define point estimate. Explain the properties of point estimate.

$$(2 \times 4 = 8 \text{ weightage})$$