

C 41849

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Name.....

Reg. No.....

SECOND SEMESTER B.C.A. DEGREE EXAMINATION, APRIL/MAY 2013
(CCSS)

CA 2C 03—COMPUTER ORIENTED STATISTICS METHODS

Time : Three Hours

Maximum : 30 Weightage

Part I

Answer all twelve questions

1. If a grouped data has open end classes, one cannot calculate:
(a) A.M. (b) Median.
(c) Mode. _____ (d) quartiles.
2. If A and B are two events, the probability of occurrence of A and B simultaneously is given as :
(a) $P(A) + P(B)$. (b) $P(A) P(B)$.
(c) $P(A \cap B)$. (d) $P(A \cup B)$.
3. If X is a continuous random variable with median M, then which of the following is not true ?
(a) $P(X < M) = P(X > M)$. (b) $P(X = M) = \frac{1}{2}$.
(c) $P(X \leq M) = 1$ (d) $P(X = M) = 1$
4. The ratio of the sample variances of two normal populations follows :
(a) t-distribution. (b) F- distribution.
(c) χ^2 distribution. (d) Normal distribution.
5. The hypothesis under test is called :
(a) Simple hypothesis. (b) Null hypothesis.
(c) Alternative hypothesis. (d) Composite hypothesis.
6. The relation between A.M, G.M and H.M is _____
7. The sum of deviations of a set of observations from their A.M is _____

Turn over

8. Classical definition of probability is applicable only for random experiment whose sample space contains _____ number of elements.
9. The intersection of two events is null event, ~~then the events~~ are called
10. The mean of binomial distribution is _____ than its variance.
11. _____ is ~~an~~ unbiased and consistent estimator of population mean.
12. Probability of type one error is called

(12 x $\frac{1}{4}$ = 3 weightage)

Part II

Answer **all** nine questions.

13. What is an average ? Name any three averages.
14. Write **arshort** note on Lorenz curve and its importance.
15. Define sample space. Give an example.
16. State **addition theorem** on probability.
17. What is statistical regularity ?
18. Define mathematical expectation.
19. Define- marginal distribution of a **bivariate** distribution.
20. Define **unbiasedness**. What is the unbiased estimate of population mean ?
21. What are the two types of errors in **testing** of hypothesis ? Define them.

(9 x 1 = 9 weightage)

Part III

Answer any **five** questions.

22. State principle of least squares. Write normal equations of $Y = A + BX + E$.
23. Distinguish between absolute and relative measures of dispersion. Give examples.
24. What is the probability that a randomly selected leap year have 53 Mondays ?
25. Define distribution function. State its properties.
26. Define moment generating function (**mgf**). What is the use of **mgf** ?
27. A fair coin is tossed. If it is a head, **'A'** get 10 rupees and otherwise 'A' loose 5 rupees. What is the expected gain **of 'A'** in a single trial ?
28. Give the interval estimate of mean of a normal population.

(5 x 2 = 10 weightage)

Part IV

Answer any two questions.

29. Explain the procedure for fitting the curve $Y = A + BX + CX^2$.
30. Define normal distribution. What are the properties of normal distribution? Explain its significance in statistical inference.
31. Let there are two boxes. First box contains 7 white and 8 red balls while second box contains 6 white and 4 red balls. One ball is selected from the first box at random and placed in the second box. Then if a ball selected at random from the second box, what is the probability that it is a white one?

(2 x 4 = 8 weightage)