17U247 (Pages: 2) Name …………..…………

Reg. No…………..………

SECOND SEMESTER BCA. DEGREE EXAMINATION, APRIL 2018

(Supplementary/Improvement)

(CUCBCSS – UG)

CC15U BCA2 C03 – COMPUTER ORIENTED STATISTICAL METHODS

(Complementary Course: Statistics)

(2015, 2016 Admission)

Time: Three Hours Maximum: 80 Marks

Part A

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

1. The definition of statistical probability was originally given by

   (a) De Moivre (b) Laplace (c) Von Mises (d) Pascal

2. The presence of extreme observations affect

   (a) AM (b) median (c) mode (d) any of them

3. Reject H_0 when H_0 is true is :

   (a) Type I error (b) Type II error (c) Standard error (d) Sampling error

4. Each outcome of a random experiment is called

   (a) primary event (b) compound event (c) derived event (d) all the above

5. What is the Geometric Mean of the numbers 0,8,24,40

   (a) 8 (b) 24 (c) 0 (d) $8\sqrt{15}$

6. The normal distribution is symmetric about ……………
7. If two events A and B are disjoint, then P(AUB) = ……………
8. The method generally employed for curve fitting is known as ……………
9. The square of any standard normal variate follows …………… distribution
10. The variance of the Binomial distribution is ……………

(10 x 1 = 10 Marks)

Part B

Answer ***all*** questions. Each question carries 2 marks.

11. What is a measure of central tendency? Define any three of them.
12. Explain the principle of least squares.
13. What are the limitations of Classical definition of Probability?
14. Distinguish between parameter and statistic.
15. Define Spearman’s coefficient of rank correlation coefficient.

(5 x 2 = 10 Marks)

Part C

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

16. Write down the merits and demerits of mode.

17. Find the mean deviation about the median of the data given in the following ungrouped frequency distribution of deaths due to accidents in a month.

No. of accidents	0	2	3	5	8
No. of days	20	4	3	2	1

18. Mention the various properties of Correlation coefficient.
19. State and prove the addition theorem of probability.
20. If A and B are two independent events, then S.T (i) A and B^c are independent (ii). A^c and B are independent.
21. Obtain the m.g.f of Poisson distribution; hence obtain its mean and variance.
22. Obtain the 95% confidence interval for the variance of a normal population $N(\mu, \sigma)$
23. What is the sampling distribution of sample mean calculated from random samples drawn from $N(\mu, \sigma)$ **(5 x 4 = 20 Marks)**

Part D

Answer any ***five*** questions. Each question carries 8 marks.

24. Compute Karl Pearson's Correlation coefficient:

X	1	3	4	6	8	9	11	14
Y	1	2	4	4	5	7	8	9

25. Define Coefficient of variation. From the following data on prices of two commodities A and B during five weeks find out which commodity has more stable price:

A	45	38	50	42	40
B	80	78	84	80	68

26. State and prove Bayes' theorem.
27. If (X, Y) has the joint density function $f(x, y) = \begin{cases} \frac{1}{8}(6 - x - y), & 0 < x < 2, \ \ 2 < y < 4 \\ 0 \ otherwise \end{cases}$

Determine (i).the marginal densities.(ii).whether X and Y are independent (iii).Compute $P(X < 1 | Y < 3)$

28. Explain the properties of a good estimator. Give an example to show that a consistent estimate need not be unbiased.
29. X is a normal variate with mean 64 and variance 144. Find (i). $P(X \geq 67)$ (ii). $P(60 \leq X \leq 67)$ (iii). $P(X < 60)$
30. Fit a straight line $Y = \ ax + b$ to the following data

x	1	2	3	4	5	6	7
y	80	90	92	83	94	99	92

31. A random sample of 500 apples was taken from a large consignment and of these 65 were bad. Estimate the proportion of bad apples by a 90%confidence interval.

(5 x 8 = 40 Marks)

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