Goa Vidyaprasarak Mandal's
GOPAL GOVIND POY RAITURCAR COLLEGE OF COMMERCE AND ECONOMICS, PONDA-GOA
B.C.A (SEMESTER-IV) EXAMINATION, APRIL 2019
BCA 404 DATA ANALYSIS AND STATISTICAL TECHNIQUES

Duration: 2 hours   Marks: 50

Instructions:
1. All questions are compulsory. However internal choice has been provided for Q.2 - Q.5
2. Figures to right indicate full marks.
3. Use of non-programmable calculators are allowed.
4. On request graph papers will be provided.

Q 1) A) Answer the following.(5×1=5)
a) For 1, 2, 3, 4, 5, 6 the median is _____.
b) Mean of Poisson distribution is given by _____.
c) The coefficient of correlation 'r' indicates a positive correlation between X and Y if $r \approx$ _____.
d) Two events A and B are such that $A \cap B = \emptyset$, then two events are _____.
e) Second quartile is given by _____.

B) Answer the following.   **(5×1=5)**
a) Standard deviation = _____.
b) What is data mining?
c) Define the term correlation.
d) Consider the data with mean 42 and median 43. Calculate the mode.
e) Write the formula for Karl Pearson's coefficient of correlation.

Q 2) Answer the following.(5×2=10)
a) Calculate median and mode for the following data pertaining to marks in statistics out of 140 marks for 80 students in a class.

Marks	0-20	20-40	40-60	60-80	80-100	100-120	120-140
No. of students	4	26	22	10	9	6	3

b) Draw histogram for the following data.

Class Interval	0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800
Frequency	50	30	70	20	10	40	50	30

OR

c) Find the percentiles P_{15} and P_{25} for the following data.

Age(in yrs)	15-20	20-25	25-30	30-35	35-44	40-45
No. of persons	6	17	15	25	5	7

d) Calculate the standard deviation and variance for the following data.

Profit(Rs. Cr)	Less than 10	Less than 20	Less than 30	Less than 40	Less than 50	Less than 60
No. of companies	8	20	40	70	90	100

Q 3) Answer the following questions(5×2=10)

a) On an average, one in 400 items is defective. If the items are packed in boxes of 100, what is the probability that any given box of items will contain
  (i)   No defect
  (ii)   Less than 2 defects

b) What are the merits and limitation of random sampling method?

OR

c) An organization has 7 men and 5 women. If committee of 4 members out of these is to be formed find total number of choices for
  (i)   There is no restriction on gender
  (ii)   3 men and a woman is to b selected

d) The mean lifetime of a sample of 100 light tubes produced by a company found to be 1580hrs with sample having standard deviation of 90hrs. Test the hypothesis that the mean lifetime of the tubes produced by the company is 1600hrs. (at 5% level of significance with two tailed test)

Q 4) Answer the following questions.(5×2=10)

a) Write a short note on population distribution and sample distribution.

b) For the following data, obtain the equations of regression line of 'x' on 'y' and hence determine the most likely value of x when y=4.5 .

x	2	3	4
y	4	5	2

OR

c) A sample of 100 children have a mean weight of 50.6 kg. Can it be regarded as a random sample from large population with mean weight 50kg and standard deviation 5kg for sample at 5% level of significance?

d) Find Karl Pearson's coefficient of correlation for the data given below:

x	2	5	8	10	6	3	1
Y	4	6	7	8	5	4	3

Q 5) Answer the following questions

a) Find the mean for the following.**(3)**

x	10	20	30	40	50	60
f	8	16	25	24	18	9

b) Write applications of data mining.**(5)**

c) What are the different types of data mining?**(2)**

OR

d) Find the quartile Q_1 for the following data.**(3)**

Weight(kg)	45-50	50-55	55-60	60-65	65-70	70-75
No. of students	16	17	20	21	14	12

e) What are five major elements of data mining?**(5)**

f) What are the uses data mining? **(2)**

XXXXXXXXXXXX