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Shree Damodar College of Commerce & Economics Margao Goa
S.Y.BCA, SEM-IV, May/June Supplementary Examination 2018

DATA ANALYSIS AND STATISTICAL TECHNIQUES

Duration: 2 Hours

Total Marks: 50

Instructions:

1. Figures to the right indicate maximum marks
2. All questions are compulsory
3. Standard calculators are allowed

Q .1 Attempt the following

a) Answer the following

(1X5=5)

- i. What is sampling?
- ii. A card is drawn from a pack of 52 cards. Find the probability that it is a heart or a queen
- iii. Write the formula for Karl Pearson's coefficient of correlation.
- iv. Define population
- v. Two perfect cubic dice are thrown. Find the probability that the sum of the numbers on their upper faces is at least 9.

b) Answer the following

(1X5=5)

- i. State multiplication theorem on probability of two events A and B
- ii. A box contains 2 white, 3 red and 4 green balls of identical size. One ball is drawn at random from the box. Find the probability that it is red or white?
- iii. Explain lottery method of sampling
- iv. Find Mean for the data 100, 200, 500, 300, 100, 100, 50, 60
- v. Find Mode for the data 1,2,3,2,3,5,6,5,6,5,2,3,2,2,2

Q .2 Answer the following (Any two)

(5X2=10)

- a) Calculate Q_1 , Q_2 , and Q_3 and hence find Quartile deviation for the data below

Height in cm	90	95	100	105	110	115	120	125
No. of children	10	21	32	44	60	40	20	12

- b) Calculate Arithmetic mean for the following

Age	Below 20	Below 40	Below 60	Below 80	Below 100
frequency	5	12	32	42	50

- c) Find standard deviation and variance for the following

Class interval	0-4	4-8	8-12	12-16	16-20	20-24	24-28	28-32
Frequency	4	12	40	41	27	13	9	4

Q .3 Answer the following (Any two)**(5X2=10)**

- a) Explain the methods of sampling.
- b) Write a detailed explanation of normal distribution
- c) Find Mean and mode for the following.

x	10	20	30	40	50	60	70
f	4	6	10	16	12	8	3

Q .4 Answer the following (Any two)**(5X2=10)**

- a) A four digit number is formed using the digits 1, 2, 3, 4, 5. Find the probability that the number so formed
- Is even
 - Is odd
 - Ends with 3
 - Has all distinct digits
 - Has all distinct digits and ends with 3
- b) Define data mining and explain its applications in detail
- c) The average number of customers who appear at a counter of a certain bank per minute is 3. Find the probability that during the given minute
- No customer appears
 - 3 or more customers appear
 - Exactly 3 customers appear
 - At most 3 customers appear
 - At least 2 customers appear (given $e^{-3} = 0.05$)

Q .5 Answer the following (Any two)**(5X2=10)**

- a) Draw scatter diagram and find coefficient of correlation by using Karl Pearson's method

X	10	20	30	40	50	60	70	80
Y	3	5	6	8	10	11	13	15

- b) Find coefficient of correlation for the given ranks

R_1	1	3	2	8	3	5	5	7
R_2	8	6	1	3	3	2	5	6

- c) For the following data, find

X	4	12	20	28	36	44	52	60
Y	2	4	6	8	10	12	14	16

- \bar{x}, \bar{y}
- $V(x), V(y)$
- σ_x, σ_y
- $cov(x, y)$
- r
- b_{xy}, b_{yx}
- Equations of lines of regression