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Shree Damodar College of Commerce & Economics Margao Goa
S.Y.BCA, SEM IV, Semester End Examination, April 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. *Only Standard calculators are allowed*

Q .1 Answer the following

a) Answer the following **(1X5=5)**

i. How many ways can a four digit number be formed from the digits 1, 2, 3, 4, 5, 6 if repetition of digits is allowed?
ii. Define sampling
iii. Write the formula for normal distribution
iv. Write the list of areas where data mining is widely used.
v. What is mode?

b) Answer the following **(1X5=5)**

i. How many ways can 3 books on accounts, 4 books on statistics and 2 books on English can be arranged so that the books of same subject are always together?
ii. Let A and B be mutually exclusive and mutually exhaustive events, then A∪B =..... and A∩B =.....
iii. Write a short note on purposive random sampling
iv. Find Mean and Mode for the data 2,3,5,6,2,2,3,3,5,3,5,8,9,4,2,3
v. Draw the graph of normal distribution

Q .2 Answer the following (Any two) **(5X2=10)**

a) Calculate Mean deviation(Absolute) for the following data

Class interval	0-4	4-8	8-12	12-16	16-20	20-24	24-28
Frequency	10	12	16	18	10	10	12

b) Calculate Variance for the following

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	12	4	8	9	12	12	14

c) Compute Mode for the following

Class interval	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16
Frequency	2	15	3	7	5	10	12	4

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

a) Explain the methods of random sampling

b) Solve the following

i. The mean of random sample of 300 hundred objects is 51.3 and the mean of another sample of 500 objects is 40. Can we conclude at 5% level of significance, that both the samples are from the same population with standard deviation 10?

ii. A sample of 100 children has a mean weight of 50.6kgs. Can it be regarded as a random sample from a large population with mean weight of 50kgs and standard deviation of 5kgs at 5% level of significance?

c) Draw frequency polygon and Histogram for the following

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	4	6	10	16	12	8	4

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

a) A bag contains 50 counters numbered from 1 to 50. One counter is drawn at random. Find the probability that the number on the counter is a multiple of
(a) 5 or 7, (b) 5 or 6, (c) 5 and 7, (d) 5 and 6 and (e) 2 or 3.

b) **1)** There are 4 boys and 5 girls, out of which, a committee of 2 boys and 3 girls is to be formed. Find the number of ways, this can be done if

i. There is no restriction on the selection
ii. A particular boy is to be included
iii. A particular girl is to be excluded

2) A club has 5 girls and 7 seven boys. If 4 persons out these are to be selected, find the total number of choices if:

i. There is no restriction on gender,
ii. 3 boys and one girl is to be selected

c) Write the formula for Poisson Distribution
If $\lambda = 0.7$, find P(2), P($x \leq 2$), P($x \geq 3$) and P(0) given $e^{-0.7} = 0.497$

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

a) Find coefficient of correlation by using Karl Pearson's method

x	3	1	0	4	5	-1	-4	2	3	-3
y	6	-5	-2	8	5	0	1	-1	4	-6

b) Find coefficient of correlation by using Spearman's Method

x	A^+	B	B^+	B^+	A	C	C^+
y	A	B	C	C^+	A^+	B	D

c) Find equation of line of regression of y *on* x by using least square method

x	11	9	13	25	15	19	21	17
y	2	1	3	9	4	6	7	5