Punjab Technical University
BBA Examination 2006-2007

BBA (102)(Old) (Semester. - 1st) BASIC BUSINESS STATISTICS 2007

Time : 03 Hours Maximum Marks : 75
Instruction to Candidates:
1) Section -A is Compulsory.
2) Attempt any Nine questions from Section - B.

Section - A
(15 × 2 = 30)
Q1)
a) Represent the following data by a stem-and -leaf plot and a histogram.
12 11 9 5 12 6 7 9 11 11
b) Calculate the mean of the following.
Numbers 8 10 15 20
Frequency 5 8 8 4
c) Find the mean deviation of the set of numbers given by
9, 3, 8, 8, 9, 8, 9, 18.
d) Find the standard deviation of the above set of numbers.
e) Define Sampling with replacement and sampling without replacement.
f) A coin is tossed four times. What is the probability of obtaining two or more heads.
g) What is the formula of mean and variance for a binomial distribution.
h) Write Poisson?s distribution and its mean.
i) Define Regression.
J-8616[S-9700620] P.T.O.
j) Using an appropriate subscript notation, write the regression equations of X3 on X1, X2 & X4.
k) Determine which characteristic movement of a time series you will mainly associate with
(i) an era of prosperity.
(ii) an after Easter sale in a departmental store.
l) Define seasonal index and name the methods for computing seasonal index.
m) What is formula for Laspeyre?s Price Index?
n) Define the term price relative.
o) What is a trend in relation to time- series analysis?

Section - B
(9 × 5 = 45)

Q2) Complete the following frequency distribution :
Variable 10-20 20-30 30-40 40-50 50-60 60-70 70-80
Frequency 12 30 ? 65 ? 25 18
Given that total frequency is 229 and median is 46. Find the missing frequencies.

Q3) The following table shows the marks obtained by 100 candidates in an examination. Calculate the mean & standard deviation.

Marks	1-10	11-20	21-30	31-40	41-50	51-60
No. of Candidates	3	16	26	31	16	8

Q4) Find the semi-interquartile range for the height distribution of the students at XYZ university given in the table.

Height (in)	60-62	63-65	66-68	69-71	72-74
No.of Students	5	18	42	27	8

Q5) A population consists of the five numbers 2, 3, 6, 8 & 11. Consider all possible samples of size 2 that can be drawn without replacement from this population. Find

(a) the mean of the population.

(b) the standard deviation of the population.

(c) the mean of the sampling distribution of means,

(d) the standard deviation of the sampling distribution of means.

Q6) There are three bags: first containing 1 white, 2 red, 3 green balls; second 2 white, 3 red, 1 green ball, and third 3 white, 1 red, 2 green balls. Two balls are drawn at random. These are found to be one white and one red. Find the probability that the balls so drawn came from the second bag.

Q7) In a sample of 1000 cases, the mean of certain test is 14 and standard deviation is 2.5. Assuming the distribution to be normal, find.

(a) how many students score between 12 and 15.

(b) how many score above 18?

(c) how many score below 8?

(d) how many score 16?

Q8) The two regression equations of the variables x & y are x = 19.13 ? 0.87y and y =11.64 ? 0.50x. Find mean of x?s, mean of y?s and the correlation co-efficient between x and y.

Q9) Write short notes on

(a) Partial Correlation.

(b) Co-efficient of Multiple Correlation.

Q10) Classify four main types of characteristic movements of time series and discuss in brief.

Q11) Discuss few ways in which a trend can be estimated.

Q12) The following table shows the number of murders (in thousands) in US for the years 1985 ? 1995. Construct a 4 year moving average.

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Murders (in thou.)	19.0	20.6	20.1	20.7	21.5	23.4	24.7	23.8	24.5	23.3	21.6

Q13) Discuss Statistical elimination of cyclical factors of time series in brief.