K L UNIVERSITY
DEPARTMENT OF MATHEMATICS

A.Y.: 2013-2014	SEMESTER – I	CLASS: II/IV B.Tech
Branch: BT/CE/ME	Course Code & Title: 11-BS201 & Probability and Statistics	
Date: 12-AUGUST-13	Time: 09:00 – 09:45AM	Max. Marks: 10
Team of Instructors:	1. Dr. N. Konda Reddy; 3. D. Reddy Babu	2. Srinivasa Kumar Ch; 4. N. Vedavathi;

ASSIGNMENT QUESTIONS

1. Some efforts are currently being made to make textile fibers out of peat fibers. This would provide a source of cheap feedstock for the textile and paper industries. One variable being studied is X, the percentage ash content of a particular variety of peat moss. Assume that a random sample of 50 mosses yields these observations:

0.5	1.8	4.0	1.0	2.0	1.1	1.6	2.3	3.5	2.2
2.0	3.8	3.0	2.3	1.8	3.6	2.4	0.8	3.4	1.4
1.9	2.3	1.2	1.9	2.3	2.6	3.1	2.5	1.7	5.0
1.3	3.0	2.7	1.2	1.5	3.2	2.4	2.5	1.9	3.1
2.4	2.8	2.7	4.5	2.1	1.5	0.7	3.7	1.8	1.7

Group these numbers into a frequency distribution table by using (i) Inclusive method (ii) Exclusive method. **[5MARKS]**

[Introduction to Probability & Statistics by J. Susan Milton & Jesse C. Arnold, Tata Mc Graw Hill Publications, Page No.215, problem No.11]

2. The accompanying frequency distribution of fracture strengths (MPa)observations for ceramic bars fired a particular kiln appeared in the article "Evaluating Tunnel Kiln Performance".

Class:	81-83	83-85	85-87	87-89	89-91	91-93	93-95	95-97	97-99
Frequency:	6	7	17	30	43	28	22	13	3

Construct a histogram and ogive curves. Also locate the median.

[Probability & Statistics for Engineers by Jay L. Devore, Cengage learning, Page No. 41, problem No. 4(a)] [5MARKS]

3. The following data represents the life times (in hours) of a sample of 40 transistors.

112	121	126	108	141	104	136	134	121	118	143	116
108	122	127	140	113	117	126	130	134	120	131	133
118	125	151	147	137	140	132	119	110	124	132	152
135	130	136	128								

Determine median and standard deviation life time of the transistors.

[Probability & Statistics for Engineers and Scientists by Sheldon M. Ross, Elsevier publications Page No. 48, problem No. 16]. [5MARKS]

4. An incomplete frequency distribution show daily wages (in Rs) of employees of a company is given below:

Variable	Frequency
10-20	12
20-30	30
30-40	?
40-50	65

Variable	Frequency
50-60	?
60-70	25
70-80	18
Total	229

Given that the mean wage of the employees is Rs.46, determine the missing frequencies and also compute the median and mode.

[Fundamentals of Mathematical Statistics", S C Gupta and V K Kapoor, S Chand & Sons, New Delhi, 11th Edition, Chapter-2] [5MARKS]

5. The following data on Hc and CO emissions for one particular vehicle was given.

Hc (gm/mi):	13.8	18.3	32.2	32.5	34.5
CO(gm/mi):	118	149	232	236	242

Compute the coefficient variation, and discuss which group is more consitent

[Probability & Statistics for Engineers by Jay L. Devore, Cengage learning, Page No. 41, problem No. 3]. [5MARKS]

6. From the following data calculate mean and variance of sulfur oxides emission data

X	6.95	10.95	14.95	18.95	22.95	26.95	30.95
F	3	10	14	25	17	9	2

[Probability & Statistics for Engineers by Richard A Johnson, PHIPage No. 38, Problem No. 1]. [5MARKS]

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