Exam Seat No:_____ Enrollment No:_____

C.U.SHAH UNIVERSITY

WADHWAN CITY

University (Winter) Examination -2013

Course Name :M.Sc(IT) Semester-I **Subject Name: - Statistical Methods For Computer Science** **Marks : 70**

Duration :- 2:30 Hours **Date : 03/01/2014**

Instructions:-

(1) Attempt all Questions of both sections in same answer book / Supplementary.
(2) Use of Programmable calculator & any other electronic instrument is prohibited.
(3) Instructions written on main answer Book are strictly to be obeyed.
(4) Draw neat diagrams & figures (If necessary) at right places.
(5) Assume suitable & Perfect data if needed.

SECTION-I

Q. 1 Define Following Terms with Example **[07]**
Quartile, Mean, Median, Mode, Frequency, Percentile, Weighted Mean

Q-2(a) The following data shows the lowest listed ticket prices in the San Jose Mercury News for 15 major Bay Area concerts during one randomly selected week in the summer. Consider this to be a sample of all concerts :35, 35, 45, 54, 45, 33, 35, 40, 38, 48, 75, 89, 35, 45, 44. Find mean, median, mode. **[05]**

(b) The following frequency distribution shows the price per share for the 30 companies in the Dow Jones Industrial Average (The Wall Street Journal, January 16, 2006). **[05]**

Price per Share	Frequency
$20–29	7
$30–39	6
$40–49	6
$50–59	3
$60–69	4
$70–79	3
$80–89	1

Compute the mean price per share and the standard deviation of the price per share for the Dow Jones Industrial Average companies

(c) Forbes investigates the degrees of 25 best paid CEO (chief executive officer). **[04]**
Determine frequency, relative frequency, percent frequency.

Degree	None	Bachelor	Master	Doctorate
Frequency	2	11	7	5

OR

Q-2 (a) A psychologist developed a new test of adult intelligence. The test was administered to 20 individuals, and the following data were obtained: 114, 99, 131, 124, 117, 102, 106, 127, 119, 115, 98, 104, 144, 151, 132, 106, 125, 122, 118, 118. Draw Stem-and-leaf display and stretched stem-and-leaf display. **[05]**

(b) A bowler's scores for six games were 182, 168, 184, 190, 170, and 174. Using these data as a sample, compute the following descriptive statistics. Standard deviation, Variance , Coefficient of variation **[05]**

(c) The grade point average for college students is based on a weighted mean computation. For most colleges, the grades are given the following data values: A (4), B (3), C (2), D (1), and F (0). After 60 credit hours of course work, a student at State University earned 9 credit hours of A, 15 credit hours of B, 33 credit hours of C, and 3 credit hours of D **[04]**

Q-3(a) Consider the following data: **[07]**

14	21	23	21	16
19	22	25	16	16
24	24	25	19	16
19	18	19	21	12
16	17	18	23	25
20	23	16	20	19
24	26	15	22	24
20	27	24	22	20

Develop a frequency distribution using classes of 12–14, 15–17, 18–20, 21–23, and 24–26. Construct Dot plot and histogram .

(b) 30 students were asked what their majors were. The following represents their responses (M=Mathematics; G=Gujarati; E=English; S=Science). **[07]**

G	M	M	G	M	E
M	S	G	E	E	M
G	S	E	M	G	M
G	M	G	S	G	M
E	E	M	G	M	M

a. What is the frequency of English major students

b. What is the relative frequency of Science major students?

OR

Q-3 (a) The following are 5 purchases of a raw material over the past 3 months. Find the mean cost per pound . **[07]**

Purchase	Cost per Pound ($)	Number of Pounds
1	3.00	1200
2	3.40	500
3	2.80	2750
4	2.90	1000
5	3.25	800

Q-3(b) A CMAT MBA new-matriculants survey provided the following data for 2018 students. **[7]**

Age group	Applied to more than one school	
	Yes	No
23 and under	207	201
24-26	299	379
27-30	185	268
31-35	66	193
36 and over	51	169

a. Given that a person applied to more than one school, what is the probability that the person is 24–26 years old?

b. Given that a person is in the 36-and-over age group, what is the probability that the person applied to more than one school?

c. What is the probability that a person is 24–26 years old or applied to more than one school?

d. Suppose a person is known to have applied to only one school. What is the probability that the person is 31 or more years old?

e. Is the number of schools applied to independent of age? Explain.

SECTION-II

Q-4 (a) What is Correlation? **[1]**

(b) What is Perfect –Positive Correlation ? Explain with diagram. **[2]**

(c)What is Perfect-Negative Correlation ? Explain with diagram. **[2]**

(d) What is No-Correlation ? Explain with Diagram **[2]**

Q-5 (a) A bag contains 13 balls numbered from 1 to 13. Suppose an even number is considered a 'success'. Two balls are drawn with replacement, from the bag. Find the probability of getting (a) Two successes (b) exactly one success (c) at least one success (d) no success. **[05]**

(b) Find Out the Regression line Y on X For Following Data **[05]**

X	12	10	8	6
Y	8	5	4	2

(c) Write down the Formula For Regression line X on Y and Y on X **[04]**

OR

Q-5 (a) Find out the mean, median and Mode For following Data **[05]**

22,25,18,22,17,21,9,10,14,16

(b) What is Standard Deviation ? Explain with suitable Example **[05]**

(c) Define Term : Probability, Independent Event , Mutual Exclusive Event **[04]**

Q. 6 (a) Find out the Spearman's Rank Correlation For following Data **[07]**

X	22	18	26	24	27	28	27	14	12	15
Y	14	18	16	14	12	10	12	11	14	10

(b) Find Out the Karl Pearson Co-Efficient For Following Data **[07]**

X	10	20	30	40	50
Y	15	18	16	14	12

OR

Q. 6 (a) Find out the Spearman's Rank Correlation For following Data **[07]**

X	10	12	11	12	7	10	8
Y	12	6	12	7	7	5	12

(b) Find out the Regression line X on Y for following Data **[07]**

X	10	12	11	14	7	10	8
Y	12	6	12	8	7	8	12

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