C 41491　　　　　　(Pages : 2)　　　　Name...................................

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FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2013

Time : Two Hours　　　　　　　　　　　　　　Maximum : 10 Weightage

Answer any **five** *questions.*
Each carries a weightage of 2.

1. (a) Calculate the mean and standard deviation for the following data :

Age class :	20 – 30	30 —40	40 – 50	50 – 60	60 – 70	70 – 80	80 – 90
No. of members :	3	61	132	153	140	51	2

   (b) Find the Median of the following frequency distribution :

Class	20 — 30	30 — 40	40 — 50	50 — 60	60 — 70
Frequency :	3	5	20	10	5

2. Draw Histogram and Ogive for the following data and hence obtain Quartiles :

Class	0 – 10	10 – 20	20 – 30	30— 40	40 – 50	50 – 60	60 – 70
Frequency :	4	8	11	15	12	6	3

3. (a) Find the Geometric mean for the following series of monthly income of a batch of families :

   180, 250, 490, 120, 1400, 7,000, 1050, 150, 360, 100, 80, 200, 500 240.

   (b) Calculate Harmonic mean for the following series :

   15, 250, 15.7, 157, 1.57, 105.7, 10.5, 1.06, 25.7, 0.257.

4. Fit a Binomial distribution to the following data and compute the expected frequencies :

X (No. of heads)	0	1	2	3	4	5	6	7
Frequency	7	6	19	35	30	23	7	1

5. Fit a Normal distribution for the following. Also, compute the expected normal frequencies :

X :	60 – 65	65 – 70	70 – 75	75 – 80	80 – 85	85 – 90	90 – 95	95 – 100
No. of cells	3	21	150	335	326	135	26	4

Turn over

6. Calculate the correlation coefficient and obtain the lines of regression for the following data : Estimate the value of Y when X = 6.2.

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

7. Test whether the treatments and varieties are homogeneous :

Varieties	Treatments		
	1	2	3
A	16	64	40
B	56	72	56
C	12	56	28

8. Test whether varietal effects are significant to the following data :

Varieties					
A	8	10	12	8	7
B	12	11	9	14	4
C	18	12	16	6	8
D	13	9	12	16	15

9. The following table gives the number of good and bad parts produced by workers in each of 3 shifts in a particular firm. Is there any association between the shift and quality of parts produced by the factory ?

Shift	Good	Bad
Day	900	130
Evening	700	170
Night	400	200

10. Given the following data on three variables :

	5	8	12	3	6
X_2	3	6	10	5	2
X_3	8	12	6	4	10

Calculate the partial correlation coefficients $r_{12.3}$, $r_{13.2}$ and $r_{23.1}$.