STATISTICS (SEMESTER - 2)

CS / BSM(O) / SEM-2 / BSM-205 / 09
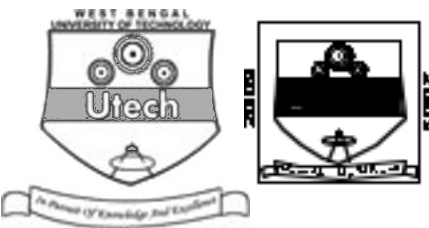
1. ....
   Signature of Invigilator

2. ....
   Signature of the Officer-in-Charge

Reg. No.

Roll No. of the Candidate

CS / BSM(O) / SEM-2 / BSM-205 / 09
ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

STATISTICS (SEMESTER - 2)

Time : 3 Hours]   [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.

2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.

   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.

3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.

4. Read the instructions given inside carefully before answering.

5. You should not forget to write the corresponding question numbers while answering.

6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.

7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**

8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.

9. Rough work, if necessary is to be done in this booklet only and cross it through.

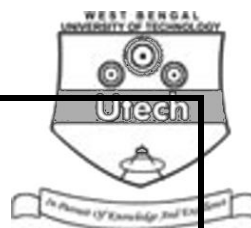**No additional sheets are to be used and no loose paper will be provided**

FOR OFFICE USE / EVALUATION ONLY
Marks Obtained

				Group – A							Group – B		Group – C		Total Marks	Examiner's Signature
Question Number																
Marks Obtained																

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Head-Examiner/Co-Ordinator/Scrutineer

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ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

STATISTICS

SEMESTER - 2

Time : 3 Hours]   [Full Marks : 70

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :   10 × 1 = 10

    i)   Standard deviation is dependent on

          a)   origin only   b)   scale only

          c)   both (a) & (b)   d)   none of these.

    ii)   Correlation coefficient lies between

          a)   – 1 to 1   b)   – 1 to 0

          c)   1 to 2   d)   none of these.

    iii) The mode of the following data 2, 5, 7, 2, 4, 9, 7, 4, 2 is

          a)   9   b)   7

          c)   2   d)   4.

    iv)   The highest point of the frequency curve is

          a)   Mean   b)   Median

          c)   Mode   d)   None of these.

    v)   The G.M. of 3, 12 and 48 is

          a)   12   b)   9

          c)   6   d)   none of these.

vi) Two regression lines are $2x + 3y - 4 = 0$ and $x + 2y + 6 = 0$. Their correlation coefficient between x and y is

a) $-\dfrac{3}{4}$ b) $\dfrac{3}{4}$

c) $\dfrac{4}{3}$ d) $-\dfrac{4}{3}$.

vii) The relation between Mean, Median and Mode is

a) mean – mode = 3 (mean - median)

b) mean – mode = median – mean

c) mean – median = 3 (mean – mode)

d) none of these.

viii) Variance is dependent on

a) origin only   b) scale only

c) both (a) & (b)   d) none of these.

ix) The H.M. of 6, 12 and 24 is

a) 72/7   b) 12

c) 14   d) none of these.

x) The mean of 36, 40, 44, 48 is

a) 40.70   b) 42.00

c) 46.00   d) 45.20.

xi) If the mean and variance of binomial distribution are 4 and 4/3 respectively, then value of n is

a) 4   b) 5

c) 6   d) 8

e) none of these.

xii)   The coefficient of correlation will have positive sign when

    a)   *X* is increasing and *Y* is decreasing

    b)   both *X* and *Y* are increasing

    c)   *X* is decreasing and *Y* is increasing

    d)   there is no change in *X* and *Y*.

GROUP – B
(Short Answer Type Questions)

Answer any *three* of the following.   3 × 5 = 15

2.   The average marks obtained by two groups in an exam were found to be 75 and 85 respectively. Determine the ratio of students in the two groups if the average marks for all the students was 80.

3.   Find the median of the following :

Class Boundaries	15 - 25	25 - 35	35 - 45	45 - 55	55 - 65	65 - 75
Frequencies	4	11	19	14	0	2

4.   Calculate S.D. :

Class Boundaries	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
Frequencies	5	8	15	16	6

5.   The weighted A.M. of four numbers 26, 28, 12 and 14 were found to be 10.4. If the weights of the first three numbers are 1, 3 and 4 respectively, find the weight of the 4th number.

6.   The means and S.D. of two samples of size 50 and 100 respectively are 54.4 and 50.3 and the S.D. are 8 and 7. Obtain the mean and S.D > of the combined group.

GROUP – C

(Long Answer Type Questions)

Answer any *three* questions.

$3 \times 15 = 45$

7. a) Calculate correlation coefficient for the following data :

X	10	12	13	16	17	20	25
Y	19	22	24	27	29	33	37

b) Write a note on Scatter Diagram.

8. The following table has some frequencies missing. Given that the total frequency is = 1000 and that median = 413.11. Find the missing frequencies.

Values	300-325	325-350	350-375	375-400	400-425	425-450	450-475	475-500
Frequencies	5	17	80	?	326	?	88	9

9. a) The number of runs scored by cricketers *A* and *B* during the test series for each of 10 innings are

Cricketer A	34	36	45	75	12	61	40	58	82	11
Cricketer B	47	38	53	42	36	54	48	34	50	54

Make a comparative study of their batting performance.

b) If $3x + 4y = 5$ and MD of x about mean is 8, find the mean deviation of y about its mean.

10. From the data given below find

i) Regression equations

ii) The correlation coefficient between marks in Economics and Statistics.

iii) The most likely marks in Statistics when the marks in Economics is 30.

Marks in Economics (x)	25	28	35	32	31	36	29
Marks in Statistics (y)	43	46	49	41	36	32	31

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END