Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/MMA/SEM-1/MMA-102/2011-12

2011

QUANTITATIVE METHODS – II

Time Allotted : 3 Hours   *Full Marks :* 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

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

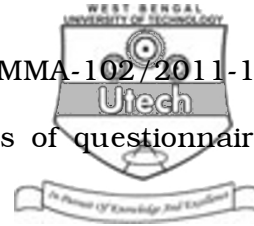   i)   Mean – Mode =

         a)   3 (Mean – Median)

         b)   2 (Mean – Median)

         c)   3 (Median – Mean)

         d)   Median – Mean.

     ii)   The general relation between AM, GM, HM of *n* observations is

         a)   AM ≥ GM ≥ HM   b)   AM ≤ GM ≤ HM

         c)   AM < GM < HM   d)   AM = GM = HM.

40722   [Turn over

iii) The AM of 1, 2, 3, ... , n =

    a) $n/2$ b) $(n + 1)/2$

    c) $(2n)/2$ d) None of these.

iv) Standard Deviation (SD) is a measure of

    a) central tendency

    b) dispersion

    c) both (a) & (b)

    d) none of these.

v) The relation between Median and 2nd Quartile ($Q2$) is

    a) Median = $Q2$

    b) Median < $Q2$

    c) Median > $Q2$

    d) None of these.

vi) For a distribution with AM = 105 and standard deviation = 21, the coefficient of variance =

    a) 30%

    b) 20%

    c) 19·5%

    d) None of these.

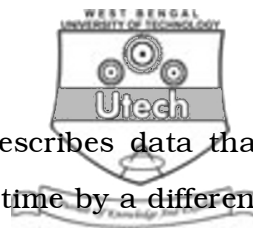vii) Which of the following are principles of questionnaire construction ?

   a)   Consider using multiple methods when measuring abstract construct

   b)   Use multiple items to measure abstract construct

   c)   Avoid double-barrelled questions

   d)   All of these

   e)   Only (b) and (c).

viii) Which of the following is not a method of data collection ?

   a)   Questionnaires

   b)   Interviews

   c)   Experiments.

ix) Which of the following is true concerning observation ?

   a)   It takes less time than self-report approaches

   b)   It costs less money than self-report approaches

   c)   It is often not possible to determine exactly why the people behave as they do

   d)   All of these.

x) Which of the following terms best describes data that were originally collected at an earlier time by a different person for a different purpose ?

a) Primary data   b) Secondary data

c) Experimental data   d) Field notes.

xi) A technique used when selecting clusters of different sizes is called

a) cluster sampling

b) one-stage sampling

c) two-stage sampling

d) probability proportional to size or PPS.

xii) The process of drawing a sample from a population is known as

a) Sampling   b) Census

c) Survey research   d) None of these.

GROUP – B
(Short Answer Type Questions)
Answer any *three* of the following.   3 × 5 = 15

2. Examine the merits & demerits of observation method of data collection.

3. Distinguish between questionnaire & schedule.

4. Calculate the standard deviation of the frequency distribution given below.

x	0	1	2	3	4	5	6	7	8
f	4	10	13	21	23	20	18	9	2

5. Distinguish between census & sampling. What are the different types of non-probability sampling methods ?   2 + 3

6. What are the different sources of secondary data ? State some disadvantages of telephonic interview method.   2 + 3

GROUP – C

(Long Answer Type Questions)
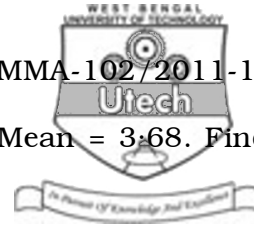
Answer any *three* of the following.   3 × 15 = 45

7. Enumerate different methods of collecting data. Which one is the most suitable for conducting enquiry regarding family welfare programme in India. Explain its merits & demerits.

8. The manager of a multinational company and the union of workers are preparing to sit down at the bargaining table to work out the details of a new contract for the workers. Each side has developed certain proposals for the contents of the new contract. Let us call union proposals "Proposal 1", "Proposal 2" and "Proposal 3", and manager's proposals, "Contract A", "Contract B" and "Contract C". Both parties are aware of the financial aspects of each proposal-contract combination. The reward matrix is :

Proposal	Contract		
	A	B	C
1	9·5	12·0	7·0
2	7·0	8·5	6·5
3	6·0	9·0	10·0

- Is there an equilibrium point ?

- Find the mixed strategies for the union and the manager.

- Formulate the LP problem to determine the optimum strategy for the union and the optimum strategy of the manager.

9. a) For the frequency table given below Mean = 3·68. Find the missing frequencies.

Values of x	0	1	2	3	4	5	6	7	Total
Frequency	2	8	11	—	29	—	12	3	100

b) The mean of 50 observations was found to be 18. On further verification it was detected that the values 22 and 16 were wrongly copied as 19 and 24 respectively. Find the correct mean. 10 + 5

10. Write short notes on any *three* of the following : 3 × 5

a) Decision making under certainty & under uncertainty

b) Case study method of data collection

c) Establishing the relationship among AM, GM & HM

d) Interval estimation

e) Markov analysis.

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