*Name* : ……………………………………………………

*Roll No.* : …………………………………………………

*Invigilator's Signature* : ……………………………………

## CS/MBA (OLD)/SEM-(3 FT & 5 PT)/MB-301/2009-10
# 2009
# QUALITY MANAGEMENT

*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 the following :    10 × 1 = 10

   i)    Who amongst the following is considered as the "Father
         of Quality Management" ?

         a)   Philip B. Crosby        b)   Edward W. Deming

         c)   Joseph Juran            d)   Genichi Taguchi.

   ii)   Kaizen means

         a)   continuous improvement

         b)   once improved forget it

         c)   availability in time

         d)   delay in work.

110002                                          [ Turn over

iii) Quality Audit

    a) means a systematic and independent examination of a quality system

    b) is always conducted by outside experts

    c) cannot be extended to suppliers and contractors

    d) is performed daily on a continuous basis.

iv) The concept of "Zero Defects" was developed by

    a) Armand Feignbaum    b) Edward W. Deming

    c) Philip B. Crosby    d) Kaoru Ishikawa.

v) Which of the following is not included in 7 QC tools ?

    a) Pareto Analysis    b) Check Sheet

    c) Histogram    d) Pie chart.

vi) Malcolm Baldrige was created to stimulate growth in quality management in

    a) India    b) United States

    c) United Kingdom    d) Japan.

vii) A six sigma process ensures not more than ..................... defects per million opportunities.

a) 2700

b) 4·3

c) 3·4

d) 99·73.

viii) The "C" in FMECA stands for

a) cost

b) criticality

c) control

d) cause.

ix) Benchmarking helps all of the following *except*

a) a company to discover its strengths and weaknesses

b) a company to measure its performance against that of best-in-class companies

c) a company to have a basis for its own targets and strategies

d) a company to achieve instant results.

3    [ Turn over

x) What is Quality circle ?

a) A task force

b) Problem solving tool of management

c) Voluntary organisation formed by the Labour Union

d) Voluntary team of experts formed by the management.

## GROUP – B
### ( Short Answer Type Questions )

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

2. Discuss the main determinants of quality in Manufacturing.

3. Why is quality important in services ? What are the determinants of quality in services ?

4. Describe PDCA and Kaizen philosophy.

5. Explain Juran's "Quality Trilogy". Explain how Juran's philosophy is similar or different from Deming's philosophy.

6. List seven basis QC tools and suggest application of these tools.
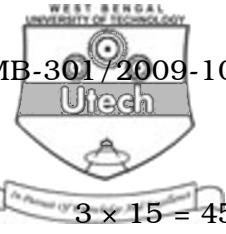
**GROUP – C**
**( Long Answer Type Questions )**
Answer any *three* of the following.       3 × 15 = 45

7.  a)  Enumerate the concept of Total Quality Management ( TQM ).

    b)  Discuss the principles of TQM.       5 + 10

8.  a)  What do you mean by ISO 9000 ?

    b)  State the objectives of ISO 9000.

    c)  Describe the process of ISO 9000 certification.   2 + 5 + 8

9.  a)  The following data shows the values of sample mean ( $X$ ) and the range ( $R$ ) to 10 samples of size 5 each.

       Establish values for upper and lower limits for mean and range and determine whether the process is in control.

| Sample No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean ( $X$ ) : | 11·2 | 14·6 | 10·8 | 11·6 | 10·8 | 9·6 | 10·4 | 9·6 | 10·6 | 7·4 |
| Range ( $R$ ) : | 7 | 9 | 8 | 5 | 6 | 4 | 8 | 4 | 7 | 5 |
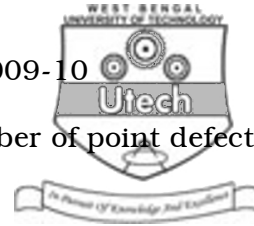
b)  The following data represent the number of point defects on the surface of bus body :

| Body No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| No. of defects : | 2 | 2 | 4 | 7 | 5 | 6 | 7 | 14 | 2 | 9 |

Compute the control limits. Which control chart will be suitable for computation ?                    10 + 5

10. "Tems are very popular in organizations today. Most organizations struggle to develop rewards that are appropriate for people on teams."

a)  What are the different types of teams ?

b)  State the roles of teams in continuous improvement.

c)  Mention guidelines for developing effective teams.

5 + 5 + 5
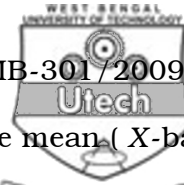
11. The following data shows the values of sample mean ( $X$-bar ) and range ( $R$ ) for 10 samples of size 6 each. Set up a 'mean' chart and 'range' chart with control limits and comment whether the process is under control.

| Sample No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean ( $X$-bar ) : | 43 | 49 | 37 | 44 | 45 | 37 | 51 | 46 | 43 | 47 |
| Range ( $R$ ) : | 5 | 6 | 5 | 7 | 7 | 4 | 8 | 6 | 4 | 6 |

( Given for $n = 6$, $A2 = 0.483$, $D3 = 0$, $D4 = 2.004$. )

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