Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS / M.TECH (CSE) / SEM-2 / CST-1203 / 2011

2011

MANAGEMENT FOR ADVANCED TECHNOLOGISTS

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 :
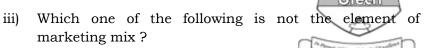
$$10 \times 1 = 10$$

    i)   Management aims at

        a)   rewarding the inefficient employer

        b)   effective utilization of human and material resource

        c)   retrenchment of employees

        d)   customer satisfaction.

    ii)   Who is the father of administrative management ?

        a)   Elton Mayo   b)   Henry Fayol

        c)   F.W. Taylor   d)   Mary Parker Foilet.

30013 (M.TECH)   [Turn over

iii) Which one of the following is not the element of marketing mix ?

    a) Product   b) Price

    c) Place   d) Packing.

iv) Productivity is the

    a) output-input ratio   b) input-output ratio

    c) production   d) cost of production.

v) S.D. of two values is

    a) half of their difference

    b) half of their summation

    c) source root of their product

    d) none of these.

vi) If the correlation between x and y is 0·5, the correlation between $5x$ and $-3y$ will be

    a) 0·5   b) − 0·5

    c) 2   d) − 2.

vii) For binomial distribution, if $n = 4$, $p = \dfrac{1}{3}$ then variance is
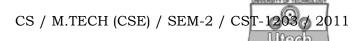
    a) $\dfrac{2}{9}$ b) $\dfrac{4}{3}$

    c) $\dfrac{8}{9}$ d) $\dfrac{2}{3}$.

viii) JIT is a concept which means

    a) A Japanese technology

    b) Making a plan from time to time

    c) Getting the items just when they are needed for production

    d) Raising purchase order just before delivery.

ix) The most important advantage of ERP is

   a) flexibility

   b) business integration

   c) better analysis

   d) use of latest technology.

x) Perfect Machine Tools Ltd. receives annually 4,000 pieces of a bought out component which costs Rs. 3 each. It has been estimated to cost Rs. 60 to place an order and execute the delivery. If the carrying cost is 25% of the inventory held, what would be the optimum size of each order ?

   a) 800   b) 600

   c) 700   d) 400.

xi) Which of the following is a principle of TQM ?

   a) Customer satisfaction

   b) Continuous improvement

   c) Both (a) and (b)

   d) None of these.

xii) Mean and standard deviations of two distributions of 100 and 150 items are 50, 5 and 40, 6 respectively. What is the standard deviation of all the 250 items taken together ?

   a) 6·69   b) 7·46

   c) 8·32   d) 4·96.

xiii) The other name of data processing is

    a)   Transaction Processing System

    b)   Processing System

    c)   Decision Support System

    d)   none of these.

xiv) The value of b_{yx} and b_{xy} are 0·7 and 3·2 respectively

    a)   the data is inconsistent

    b)   the data is consistent

    c)   invalid data

    d)   none of these.

GROUP – B

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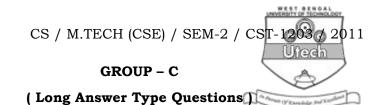
Answer any *three* of the following.   3 × 5 = 15

2. a)   Define Management.   2

    b)   Discuss briefly five major functions of management.

    3

3.   "MIS – A tool for Management Process." Discuss.

4. Briefly discuss the concept of data warehouse.

5. Define human resource planning.

6. Describe the different stages of new product development.

7. Briefly state and describe Deming's 14 points for quality management.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

8. a)   Explain with example the system development cycle.   10

    b)   What is meant by a prototype model ?   5

9. a)   The manager of an oil refinery has to decide upon the optimal mix of two possible blending processes of which inputs and outputs per production run are as follows :

Process	Input		Output	
	Crude A	Crude B	Gasoline X	Gasoline Y
I	5	3	5	8
II	4	5	4	4

The maximum of crude *A* and *B* are 200 units and 150 units respectively. Market requirements show that at least 100 units of Gasoline *X* and 80 units of Gasoline *Y* must be produced. Profits per production run from Process I and Process II are Rs. 4,000 and Rs. 5,000 respectively. Determine the optimum production runs of each process to maximize the profit.
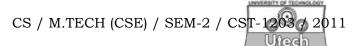
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b) A manufacturer has three products A, B and C. These products are produced on three machines M_1, M_2 and M_3. The processing time required per unit of these products are as under :

Product	Processing time per unit (m/c hours)		
	M_1	M_2	M_3
A	3	2	1
B	2	3	—
C	2	3	—
Spare Capacity per week (hrs)	240	270	60

Product A gives a profit of Rs.10/unit while product B and C generate a profit of Rs. 6/unit. How much quantity of each product should be produced so as to maximize profit ? 9

10. A software organization is preparing a project proposal for a specific software development. The following table shows the activities, time and sequences required

Activity	Immediate Predecessor	Time estimates		
		Optimistic	Most likely	Pessimistic
A	—	8	4	10
B	—	2	2	2
C	A, B	2	1	3
D	A	6	4	12
E	C, D	4	3	5
F	E	3	3	3
G	E	4	3	5
H	C, D	6	4	9
I	F, G	8	6	16
J	I, H	1	1	1

a) Draw a network diagram and find the critical path. 4

b) Show the calculation of ES, LS, LF and expected time of each activity. 8

c) What is the expected project computation time and its variance? 3

11. a) Given the bivariate date :

X :	1	5	3	2	1	1	7	3
Y :	6	1	0	0	1	2	1	5

    i) Fit a regression line of y on x and hence predict Y if $x = 10$

    ii) Fit a regression line of x on y and hence predict X if $y = 2·5$. 6

b) In a partially destroyed laboratory record of an analysis of correlation data the following results only are legible variance of $x = 9$ and regression equations are

$$8x - 10x + 66 = 0$$

$$40x - 18y = 214$$

Find :

    i) the mean value of x and y

    ii) the coefficient of correlation between x and y

    iii) the standard deviation of y. 9

12. "ERP is a complex information technology that often requires the reengineering of many enterprise processes. This presents substantial advantages as well as problems." Elaborate on these advantages and problems. 15

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