Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/M.Tech(CSE)/SEM-2/CST-1203/2012

2012

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.

Graph sheet(s) will be supplied by the Institute on demand.

GROUP – A

(Multiple Choice Type Questions)

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

i) Who is the father of Human Relations Theory ?

a) Elton Mayo b) H.W. Wilson

c) F.W. Taylor d) Henry Fayol.

ii) Management is

a) an art b) a science

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

iii) ..... is the profounder of 14-principles of management ?

a) Adam Smith b) Henri Fayol

c) Abraham Maslow d) D. McGregor.

iv) At break-even point

a) Total sales = Total variable cost

b) Total sales = Total fixed cost

c) Total sales = Total cost

d) none of these.

v) What is the central focus of all marketing activities ?

a) Seller b) Profit

c) Customer d) Competitors.

vi) The first step in SDLC is

a) preliminary investigation and analysis

b) system design

c) signing a contract for S/W development

d) database design.

vii) The rank correlation coefficient lies between

a) 0 and + 1 b) 0 and – 1

c) – 1 and + 1 d) none of these.

viii) Trade Union Act was passed on

a) 1956 b) 1946

c) 1936 d) 1926.

ix) The SD of the following numbers : 1, 2, 3, 4, 5, 6, 7, 8, 9 is

a) 3·56 b) 4·33

c) 1·98 d) 2·58.

x) The last stage in PLC is

a) growth b) maturity

c) introduction d) declined.

xi) Karl Pearson's coefficient of correlation between two variables X and Y is 0·28, there covariance is + 7·6. If the variance of X is 9, find the SD of Y series ?

X : 10 14 36 25 15

a) 10·01 b) 9·048

c) 8·34 d) 6·88.

xii) Calculate the Mean Deviation of the following values about the Median in respect of the following data :

8, 15, 53, 49, 19, 62, 7, 15, 95, 77

a) 12·4 b) 20·6

c) 27·2 d) 18·8.

xiii) For reduction of project duration, activity is selected on

a) complex path b) longest path

c) critical path d) shortest path.

xiv) The mean of two samples of sizes 50 and 100 respectively are 54·1 and 50·3. The Mean of the sample of size 150 obtained by combining two samples is

a) 48·67 b) 45·78

c) 50·98 d) 51·57.

GROUP – B
(Short Answer Type Questions)

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

2. Briefly explain Management Pyramid.
3. What are the different stages of System Development Life Cycle (SDLC) ?
4. Discuss briefly the architecture of DBMS.
5. How does recruitment process differ from selection process ?
6. "ERPP is a complex information technology that often requires the Reengineering of many enterprise processes. This presents substantial advantages" — Elaborate these advantages.

GROUP – C
(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. A travel agency deals with numerous clients each day. Time to deal with each client depends on specific requirements of each client. If a client has to wait for more than 10 minutes for active attention, it is the policy of the agency to allow that particular client of holiday voucher of Rs. 50.

The arrival and service pattern is given below :

Time between arrivals		***Time to deal with each client***	
Minutes	***Probability***	***Minutes***	***Probability***
1	0·20	2	0·05
8	0·40	4	0·10
15	0·30	6	0·15
25	0·10	10	0·30
		14	0·25
		20	0·10
		30	0·05

a) Simulate the arrivals and service of 12 clients and show the number of clients receiveing holiday voucher. 7

b) Calculate the weekly cost of the holiday vouchers assuming that the proportion of client receiving holiday vouchers as in [*a*] above applies throughout a week of 50 operating hours. 8

The given random numbers are as follows :

For arrival : 03 47 43 73 86 36 96 47 36 61 46 98

For service : 63 71 62 33 26 16 82 45 63 11 14 12

8. a) GE electric company produces two products P_1 and P_2. Products are produced and sold on a weekly basis. The weekly production cannot exceed 25 for product P_1 and 35 for product P_2 because of limited available resources.The company employs total of 60 workers. Product P_1 requires 2 man-weeks of labour, while P_2 requires 1 man-week of labour. Profit margin on product P_1 is Rs. 60 and on P_2 Rs. 40. Formulate this problem as an LPP and solve by graphical method. 5

b) Use simplex method to solve :

$$\text{Max } Z = 3X_1 + 2X_2$$

subject to constraints :

$$4X_1 + 3X_2 \leq 12,$$

$$4X_1 + X_2 \leq 8,$$

$$4X_1 - X_2 \leq 8,$$

$X_1 \geq X_2 \geq 0$. 10

9. a) For the purpose of authorization to access resources in a grid computing environment, 10 users were ranked by three resource providers *A, B* and *C* in the following order :

Ranks by A :	1	6	5	10	3	2	4	9	7	8
Ranks by B :	3	5	8	4	7	10	2	1	6	9
Ranks by C :	6	4	9	8	1	2	3	10	5	7

Use rank correlation method. Discuss which pair of resource providers has the nearest common approach towards users. 8

b) From the following data, obtain the two regression equations : 4

X :	6	2	10	4	8
Y :	9	11	5	8	7

c) Karl Pearson's coefficient of correlation between two variables *X* and *Y* is 0·28, their covariance + 7·6. If the variance of *X* is 9; find the Standard Deviation (SD) of *Y* series. 3

10. An organization is preparing a project proposal for a major project to the department of information and technology for development of a software product for disabled persons. The following table shows the activities, time and sequences required :

Activity	*Immediate predecessor*	*Duration in week*
A	E	4
B	A	2
C	B	1
D	K	12
E	–	14
F	E	2
G	F	3
H	F	2
I	F	4
J	I, L	3
K	C, G, H	4
L	D	2
M	I, L	2

a) Draw a Network diagram. 5

b) Calculate different floats and slacks. 8

c) Find the critical path and expected project completion time. 2

11. Short notes on any *three* of the following : 3 × 5

a) Normalization porcess of DBMS

b) TQM

c) BCG matrix

d) Performance appraisal

e) MIS.