MEL 422 PROJECT MANAGEMENT
MAJOR TEST

Date: May ,4, 2007

Time allowed: 2 Hours
Maximum marks: 40

Note: Attempt ***any four*** questions.
All questions carry equal marks, with equal weightage to parts (a) and (b)

1. (a) What are the qualities needed in a successful project manager? Explain how teamwork and leadership styles can be matched as the project progresses. Give examples of the kinds of problems that project managers can face in real life.

(b) Comment on the organizational structure of a firm and its effect on project performance. Which kind of organizational structure is best suited for projects and why?

2(a) Discuss the phases of Project identification, Appraisal and Selection before a project is launched.

(b) Identify six possible holiday packages you would consider during the summer and go through a screening exereise with criteria like cost, ease of travel, cost of living, unique features or other relevant features. Rank the packages and indicate how you would further process the top three alternatives for a final selecti

3(a) Compare A-O-A and A-O-N modes of project representation. What is the role of dummies in each of these formulations? What preliminary manipulations are necessary before a network is considered fit for analysis?

(b) The precedence and time data for a network are given below

Activity	***Predecessors***	***Duration (days)***
A	-	20
B	A	15
C	A	25
D	A	20
E	B, C	I4
F	C, D	12
G	D	10
H	D	2
I	D, E, F, G	12
J	G, H, I	8
K	G, H, I	6
L	J, K	15

Check and remove redundancies if any. Draw the A-O-A network and determine the critical path and four floats of all the jobs. What is the minimum project duration?

(P. T. O)

4(a) Distinguish between renewable and non-renewable resources in project management indieating the kinds of procedures used to handle cach category.

(b) For the project with the following data obtain the best levelled resource profile using the procedure of Burgess and Killebrew. Compare the initial and final sum of squares of manpower levels.

Activity	*Predecessor*	*Duration (days)*	*Daily manpower requirements*
A1	-	4	6
A2	-	2	4
A3	A1	1	3
A4	A1	6	2
A5	A2, A3	3	5
A6	A4, A5	4	3
A7	A4, A5	2	8
A8	A6	1	5

5a) Write the mathematical expression for linear time cost tradeoff in a project. Using duality derive the optimality eonditions for Fulkerson's crashing algorithm.

(b) If a project were to be monitored using the earned value concept, show through an example (i)how the time overrun is to be eomputed (ii) how thc eost overrun is to be computed

Also caleulate the schedule and cost indices. How would you make a forecast of the new project completion timc and eost.