



KIBABII UNIVERSITY

2017/2018 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER

MAIN EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN RENEWABLE ENERGY AND BIOFUELS TECHNOLOGY

COURSE CODE: IET 481

COURSE TITLE: PROJECT MANAGEMENT FOR TECHNOLOGISTS EXAMINATION

DATE: 8/8/2018

TIME: 9-11AM

INSTRUCTIONS TO CANDIDATES

Answer question ONE and any other two questions

This paper consists of 4 printed pages. Please Turn over

INSTRUCTIONS

Answer question 1 and any other two (2) questions

Time: 2 hours

QUESTION 1 (30 marks)

- a. Describe any five (5) steps involved in the process of establishing a project (15 marks).
- b. Discuss the two quantitative project management techniques giving three (3) examples of each (15 marks).

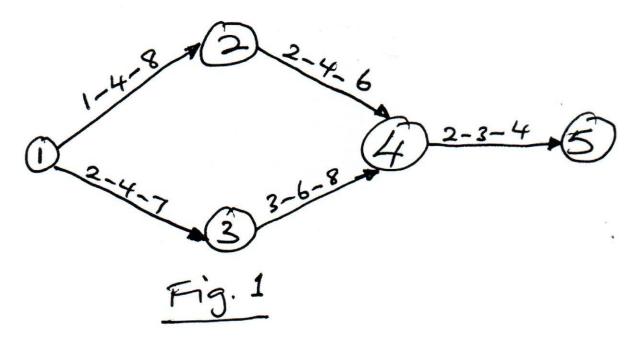
QUESTION 2 (20 marks)

- a. State any five (5) advantages of computer simulations in project management (5 marks).
- b. State the steps involved in Monte Carlo Simulation (5 marks).
- c. Using linear congruential method, generate 10 random numbers if $X_0 = 17$, a = 27, c = 43 and m = 100 (10 marks).

QUESTION 3 (20 marks)

A project consists of five activities as shown in the PERT network Fig. 1. The three estimates of activity duration along with the associated probability and random numbers for the ten trials are given in the Table below. Simulate the duration of the project ten times and estimate the chances of various paths being critical. Also determine the average duration of the project.

Activity	Days	Prob.	Random numbers for the 10 trials									
			1	2	3	4	5	6	7	8	9	10
1-2	1	0.2	8	5	5	7	0	8	4	5	2	6
	4	0.5										
	8	0.3										
1-3	2	0.3	1	5	6	5	6	3	7	8	5	1
	4	0.5										
	7	0.2			361							
2-4	2	0.3	8	8	7	1	8	0	4	2	9	3
	4	0.3										
	6	0.4										
3-4	3	0.3	3	1	4	9	1	4	0	6	0	7
	6	0.4	· R									
	8	0.3										
4-5	2	0.2	6	7	7	5	8	3	3	6	3	0
	3	0.2										
	4	0.6										



QUESTION 4 (20 marks)

A project has eleven activities whose duration is given in the following table.

Activity	1-2	2-3	2-4	3-5	3-6	4-5	4-7	5-8	6-8	7-8	8-9
Duration	2	8	10	6	3	3	7	5	2	8	3
(days)											

- a. Draw the network
- b. Determine total, free and independent floats.
- c. Identify the critical activities, the critical path and project duration.

QUESTION 5 (20 marks)

- a. Explain any five (5) sources of project finance (10 marks).
- b. Describe any five (5) project financial appraisal methods (10 marks).