KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER
MAIN EXAMINATIONS

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

COURSE CODE: REN 424

COURSE TITLE: PROJECT MANAGEMENT FOR TECHNOLOGISTS

DURATION: 2 HOURS

DATE: 02/09/2022   **TIME: 2:00PM-4:00PM**

INSTRUCTIONS TO CANDIDATES
- Answer **QUESTION ONE** (Compulsory) and any other two (2) Questions.
- Indicate **answered questions** on the front cover.
- Start every question on a new page and make sure question's number is written on each page.

This paper consists of **3** printed pages. Please Turn Over

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QUESTION 1 (30 marks)

a. Explain any five (5) key areas of project management.   (5 marks)

b. Explain any five (5) characteristics of a good project manager.   (5 marks)

c. Enumerate the risk management process.   (5 marks)

d. State any five (5) ways of cost control in project management.   (5 marks)

e. State any five (5) advantages of computerized project management system. (5 marks)

f. State any five (5) advantages of CPM/PERT.   (5 marks)

QUESTION 2 (20 marks)

a. Describe any five (5) project finance sources.   (5 marks)

b. Explain any five (5) project financial appraisal methods.   (5 marks).

c. State any five (5) desired features of project management software.   (5 marks)

d. State the steps involved in Monte Carlo Simulation.   (5 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.

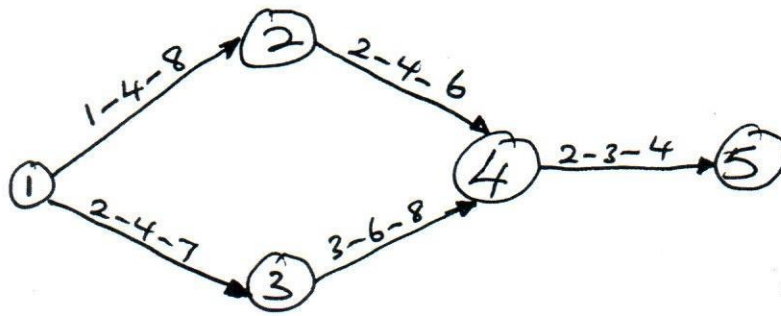| Activity	Days	Prob.	Random numbers for the 10 trials									
			1	2	3	4	5	6	7	8	9	10
1-2	1	0.3	8	5	5	7	0	8	4	5	2	6
	4	0.5										
	8	0.2										
1-3	2	0.2	1	5	6	5	6	3	7	8	5	1
	4	0.5										
	7	0.3										
2-4	2	0.3	8	8	7	1	8	0	4	2	9	3
	4	0.4										
	6	0.3										
3-4	3	0.4	3	1	4	9	1	4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

Fig. 1

QUESTION 4 (20 marks)

a. Explain the stages of project management. (5 marks)

b. Explain any five (5) sources of new project ideas. (5 marks)

c. Give any five (5) comparison of CPM and PERT as used in project management. (5 marks).

d. Describe any five (5) examples of stakeholders in a project. (5 marks)

QUESTION 5 (20 marks)

A project has twelve activities. The activity duration and the precedence relationship are given in Fig. 2. Find the total, free and independent floats for each activity. Identify the critical activities, the critical path and the project duration.
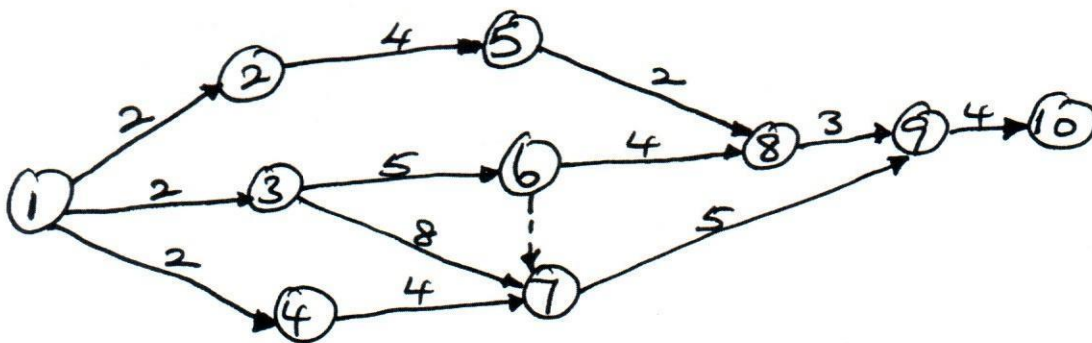

Fig. 2