

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

COMPUTER SCIENCE

SYSTEMS ANALYSIS AND DESIGN

TIME: 1hrs 30min

QUESTION ONE

- a) Define information systems(2mks)
- b) Differentiate between management information system and decision support system(4mks)
- c) Briefly explain the four tests of feasibility(6mks)
- d) Outline the phases involved in atypical systems development life cycle(6mks)

QUESTION TWO

A project has been defined to contain the following activities along with the required times for completion

| Activity | Time (wks) | Immediate predecesors |
|-----------------------------------|-------------------|------------------------------|
| A. Conduct interviews | 3 | None |
| B. Administrate questionnaires | 4 | A |
| C. Read company reports | 4 | None |
| D. Analyse data flow | 8 | B,C |
| E. Introduce prototype | 5 | B,C |
| F. Observe reactions to prototype | 3 | E |
| G. Perform cost benefit analysis | 3 | D |
| H. Prepare proposal | 2 | G |
| I. Present proposal | 2 | H |

- i) Draw an activity on node network for the activities(6mks)
- ii) Calculate the earliest expected completion time and slack time (4mks)

iii) Show the critical path (2mks)

QUESTION THREE

The monetary benefits of an information system are \$100,000 per year. The cost of development is \$200,000 per year and the operation and maintenance cost is \$20,000 per year. The discount rate is 10% per annum and the lifetime of the information system is projected at 5yrs.

- a) What is the lifetime return on investment and annual return on investment for the above project
- b) What is the payback period for the above project (12mks)

Note : $PV_n = 1/(1+i)^n$