



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

SCE 514: DECISION SUPPORT SYSTEMS

DATE: Thursday 25th November, 2010

TIME: 2.00 p.m. – 4.00 p.m.

INSTRUCTIONS

Answer question 1 and any other TWO questions.

Question 1

- a) With the aid of suitable illustrative examples, distinguish between the following terms in the context of decision support systems:
- i) Knowledge engine and knowledge base
 - ii) Action language and presentation language
 - iii) Information and knowledge
 - iv) Forward chaining and backward chaining. [16 marks]
- b) Organizations that have embraced decision support system usage are reported as enjoying a wide range of resultant benefits. Describe four of the commonly expected benefits of decision support system usage. [8 marks]
- c) Expert systems are commonly considered as a special case of decision support systems. Describe the structure and functioning of a typical expert system. [6 marks]
- [30 marks]

Question 2

The functioning of decision support systems depends very much on the quality of the ‘knowledge’ that has been developed or infused into the system. In some cases, such knowledge is provided ‘explicitly’ while in other cases the knowledge is ‘discovered’ by some automated procedure.

- a) List and briefly describe three of the options available to a knowledge engineer as he goes about the task of ‘explicit knowledge acquisition’ for a business intelligence or decision support system. [6 marks]
 - b) Describe two techniques that could be used to facilitate automated knowledge discovery. [6 marks]
 - c) Distinguish between two main techniques used for knowledge representation in expert systems. [8 marks]
- [Total 20 marks]

Question 3

- a) It is often stated, that decision support system projects are, first and foremost a ‘business processes’ more than ‘technical processes’. Explain. [6 marks]
 - b) A number of ‘success factors’ have been cited as greatly increasing the probability of success of decision support systems projects. Clearly explain four such factors. [8 marks]
 - c) Describe the range of skills that individuals in a decision support systems project should possess. [6 marks]
- [Total 20 marks]

Question 4

- a) ‘The user interface is perhaps the most important of all decision support system components.’ Discuss this assertion. [8 marks]
 - b) Identify and briefly describe the roles of four categories of typical decision support system users. [12 marks]
- [Total 20 marks]

Question 5

‘Decision modeling is an art’

- a) In the context of decision support systems components, describe the meaning of the word ‘model’. [4 marks]
 - b) Define ‘sensitivity analysis’ and state its value to the decision maker. [4 marks]
 - c) Describe the role of the model base management system in a decision support system. [12 marks]
- [Total 20 marks]

.....