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**University Examinations 2016/2017**

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF

BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY

**CIC 3426: DECISION SUPPORT SYSTEMS**

**DATE: DECEMBER 2016 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two***questions.

**QUESTION ONE (30 MARKS)**

1. Define a Decision support system. List six important characteristics of the same. (7 marks)
2. Models are classified as strategic, tactical and operational. Giving relevant examples, describe the purpose of each (6 marks)
3. Prototyping is the desired method of development of a DSS. Comment. (3 marks)
4. Discuss two limitations of expert systems. Suggest method to overcome each limitation.

(4 marks)

1. Personalogic and similar agents attempt to learn about people’s preferences. Explain how such information can be used in marketing and advertising. (4 marks)
2. You are about to buy a car. Follow Simon’s four phase model and describe your activities in each step. (6 marks)

**QUESTION TWO (20 MARKS)**

Computer decision support systems are computer applications designed to aid clinicians in making diagnostic and therapeutic decisions in patient care. They can simplify access to data needed to make decisions, provide reminder and prompts at the time of a patient encounter, assist in establishing a diagnosis and in entering appropriate orders, and alert clinicians when new patterns in patient data are recognized in a form that can save clinicians time have been shown to be highly effective.

1. What are the challenges in designing and implementing such systems? (5 marks)
2. How can it provide better patient care? Why is the DSS needed? (4 marks)
3. How will you classify the DSS? (2 marks)
4. Does it make sense to have a knowledge component? Explain your answer (4 marks)
5. What is the role of managers in this system. (2 marks)
6. What managerial lessons about DSS can be learnt from the system. (3 marks)

**QUESTION THREE (20 MARKS)**

1. What is knowledge management and why is it important for decision making? Give an example on how the two can be integrated. (5 marks)
2. Why is it necessary to maintain data quality? What are the issues related to the same? (5 marks)
3. What sources of knowledge would you consider while collecting knowledge for each of the following decision support systems? Describe them.
4. An advisory system on investment in residential real estate. (5 marks)
5. An advisory system for tax returns. (5 marks)

**QUESTION FOUR (20 MARKS)**

1. With the aid of a well-illustrated diagram, describe the various components of a DSS. (8 marks)
2. What are the potential changes in jobs and job descriptions when an organization uses MSS extensively? (4 marks)
3. Consider the decision-making situation defined by the following rules for an intelligent decision support system:
4. R1: if it is a nice day and it is summer, then I go to the golf course.
5. R2: if it is a nice day and it is winter, then I go to the ski resort.
6. R3: if it is not a nice day and it is summer, then I go to work.
7. R4: if it is not a nice day and it is winter, then I go to class.
8. R5: if I go to the golf course, then I play golf.
9. R6: if I go to the ski resort, then I go skiing.
10. R7: if I go skiing or I play golf, then I have fun.
11. R8: if I go to work, then I make money.
12. R9: if I go to class, then I learn something.

Follow the rules for the following situations. What do you conclude for each one? (8 Marks)

1. It is a nice day and it is summer
2. It is not a nice day and it is winter
3. It is a nice day and it is winter
4. It is not a nice day and it is summer.

**QUESTION FIVE (20 MARKS)**

1. With the aid of a suitable diagram, elaborate on the functionalities of a dialogue subsystem. (8 marks)
2. What is GIS used for and how does it support decision making? (5 marks)
3. Describe the knowledge management cycle with the neat diagram (7 marks)