MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

UNIVERSITY ORDINARY EXAMINATION

2018/2019 ACADEMIC YEAR

FIRST YEAR **FIRST** SEMESTER EXAMINATION FOR, MASTER OF SCIENCE IN INFORMATION TECHNOLOGY

SIT 601 – ANALYTICS AND BUSINESS INTELLIGENCE

DURATION: 3 HOURS

DATE: 20/21/2018

TIME: 9:00-11:00 AM

Instructions to candidates:

1. Answer question One and Any Other Two questions

2. Mobile phones are not allowed in the examination room.

3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30 MARKS)

a) Discuss how information and knowledge for the backbone of the decision making process, use Data- Action cycle to explain further. (6 mks)

b) Justify why data mining is classified under predictive analytics. (4 mks)

c) What information is provided by the descriptive analytics employed at magpie sensing? (4 mks)

d) Identify any five business environmental factors that create pressure on organization and explain how various ways affect it. (5 mks)

e) Differentiate between OLPT and OLAP, Explain how they have enhanced the business processing. (6 mks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

a) Using a neat diagram explain the components of business-pressure-Responses- Support model on improving business processes and decision making. (6 mks)

b) According to Gorry and Scott –Morton classical framework, explain their proposed structuredness degrees and type of controls for decision support framework. (6 mks)

c) Is management the same as decision making? Discuss. (4 mks)

d) Prescriptive analysis is considered to be a step further ahead of predictive analytics and substantially different from it, Discuss why, provide an example of each and outline their difference. (5 mks)

e) Critize how Simon's four phases of decisions making has impacted on web. (4 mks)

QUESTION THREE (20 MARKS)

a) Some "error" in decision making can be attributed to the notion of decision making from the gut. Explain what is meant by this and how such an error can happen. (5 mks)

b) Highlight similarities and differences between Simon's and Kepner-tregoe methods. (6 mks)

c) The more data the better Assess the needs to have quality data to feed decision- making system. (4 mks)

d) What are the structural differences between two-tier and three tier architectures? Which one of the two models is more suitable for analytical operations performed on a very large data set? (6 mks)

e) Discuss the Security concerns involved in building a data warehouse (4 mks)

QUESTION FOUR (20 MARKS)

a) In what circumstance would a relational database be more suitable than multi dimensional database? Justify your answer. (4 mks)

b) Highlight the utility of the three types of metadata. (6 mks)

c) Why do we need data preprocessing? What are the main task and relevant techniques used in data preprocessing. (5 mks)

d) Explain how the validity of availability data affects model development and assessment. (4 mks)

e) Compare and contrast the DMAIC model with closed loop processes of BPM. (6 mks)

QUESTION FIVE (20 MARKS)

a) Discuss the common ANN architecture, what are the Main differences between Kohonen's Self-organizing feature map and Hopfield network (6mks)

b) Discuss Social network analysis? Which type of Social network are relevant to business (4mks)

c) Highlight the role of Natural language processing in text mining. Discuss the Capabilities and limitation of NIP in the context of mining. (6mks)

d) Explain the big challenges that one should be mindful of when considering implementation of big data analytics (5mks)

e) Explain the relationship among data mining, text mining and sentiment analysis. (4mks)