



MACHAKOS UNIVERSITY

University Examinations for 2017/2018

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FOURTH YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN MATHEMATICS

BACHELOR OF SCIENCE IN MATHEMATICS AND COMPUTER SCIENCE

SMA 490: SYSTEMS ANALYSIS AND DESIGN

DATE: 13/12/2017

TIME: 8.30-10.30 AM

INSTRUCTIONS: Answer Question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

- a) Define an Information System. (2 marks)
- b) Information systems just like other systems exhibit salient characteristics. Discuss **FIVE** characteristics of information systems. (10 marks)
- c) Fred the manager of a small enterprise wants to automate his business processes by implementing an Information System. However, Fred is impatient with the process taken to develop the required system. As a system analyst explain to Fred **FOUR** reasons why System Analysis and Design is necessary. (8 marks)
- d) Briefly explain **THREE** qualities of a system analyst. (6 marks)
- e) When considering development of a system, stakeholders are concerned about whether the system will be doable. Explain **TWO** feasibility studies you would conduct as a system analyst (4 marks)

QUESTION TWO (20 MARKS)

- a) With the increase in the use of information systems in organizations, various information systems have been developed to be used in various organization levels. Using a well labeled diagram and relevant examples explain in details various types of information systems. (12 marks)
- b) Information system projects can be initiated depending on various factors. Explain in details giving examples FOUR triggers of Information System Projects. (8 marks)

QUESTION THREE (20 MARKS)

- a) Brenda the CEO & Founder of My Beauty My Worth has realized that her business is missing a lot from the online platform. This has motivated her to contemplate on coming up with an online Information System. During her search for a system analyst consultant, she gets to learn about you from her friend Judy who you had previously advised on how to go about developing a system. Explain to Brenda the process of coming up with an information system. Support your explanation with a diagram showing the process. (14 marks)
- b) Explain **THREE** roles played by a system analyst. (6 marks)

QUESTION FOUR (20 MARKS)

- a) Create a decision table depending on the following narrative. (10 marks)
- Candidates are accepted for employment if they pass their interview and their qualifications and reference are satisfactory. If they pass the interview and the qualifications or reference but not both are unsatisfactory, a job for probation period is offered. In all other circumstances the candidate's application is rejected.
- b) You have been contracted by an organization to develop an information system within a period of 6 months. Aware of the many phases involved when developing an information system, you think of the most efficient and fast development methodology to use. Using a diagram discuss the software development methodology you would use to deliver the system within the stipulated time. (10 marks)

QUESTION FIVE (20 MARKS)

- a) Users of the system are considered key when developing a system. That is why user training is needed once the system has been implemented. Explain at least THREE methods used in user training. (6 marks)
- b) System maintenance takes 87% of work in the SDLC. Explain giving examples TWO types of system maintenance. (4 marks)
- c) Using Boehm's model explain giving example FIVE attributes of a quality system. (10 marks)