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OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2018 /2019 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER REGULAR EXAMINATION

FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

COURSE CODE: **COM 220**

COURSE TITLE: **Software Engineering**

DATE: 16th April, 2019 **TIME: 9:00AM-12:00PM**

INSTRUCTION TO CANDIDATES

- **SEE INSIDE**

THIS PAPER CONSISTS OF 3 PRINTED PAGES **PLEASE TURN OVER**

COM 220: SOFTWARE ENGINEERING

STREAM: BSc (Computer Science) **DURATION: 3 Hours**

INSTRUCTIONS TO CANDIDATES

i. *Answer **ALL** questions from section A and any **THREE** from section B.*

ii. *Maps and diagrams should be used whenever they serve to illustrate the answer.*

iii. *Do not write on the question paper.*

SECTION A (24 MARKS) COMPULSORY

QUESTION ONE (12 Marks)

a) With the aid of a well labelled diagram, describe the water fall model of software development (5 Marks)

b) You have been asked to automate the lending process of the university library.

(i) with reference to the SDLC describe the activities that you will have to engage in to make this a reality (5 Marks)

(i) Come up with a Gantt chart that illustrates how you intend to accomplish the task at hand (2 marks)

QUESTION TWO (12 Marks)

a) (i) Distinguish between software validation and software verification (2 Marks)

(ii) Verifications concentrates on the design and system specifications, describe the three flaws associated targeted during the verification process. (3 Marks)

b) Give a brief description of the big bang theory software development paradigm (3 marks)

c) Provide four reasons that illustrate the thinking behind the need to maintain software (4 Marks)

SECTION B (36 Marks)

QUESTION THREE (12 Marks)

a) Explain why software engineering is extremely necessary as far as the development of successful systems is concerned (10 Mark)

b) Mention the two parts in which the Job pattern of any IT company engaged in software development can be split into (2 Marks)

QUESTION FOUR (12 Marks)

a) State the necessary factors that one needs to put into consideration when defining the scope of a software project (4 Marks)

b) The software design process can be perceived as series of well-defined steps. Sequentially outline the aforementioned steps (4 Mark)

c) Describe the four state process that needs to be put into consideration during requirements engineering (4 Marks)

QUESTION FIVE (12 Marks)

a) With the aid of a diagram, briefly describe the software reengineering process (6 Marks)

b) Describe three main concepts that act as the building blocks for structured programming (6 Marks)

QUESTION SIX (12 Marks)

You have been hired as a consultant to design, develop and implement a new system for a soap manufacturing company. You have managed to successfully go through the initial stages of the project and are now at the implementation phase. Discuss the potential problems that you may encounter which may end up increasing the risk of not implementing the new system successfully (12 Marks)

QUESTION SEVEN (12 Marks)

a) With the aid of a well labeled diagram discuss the sequential maintenance process activities as provided for in the IEEE framework (10 Marks)

b) Provide your understanding of the term software paradigm (2 Marks)

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