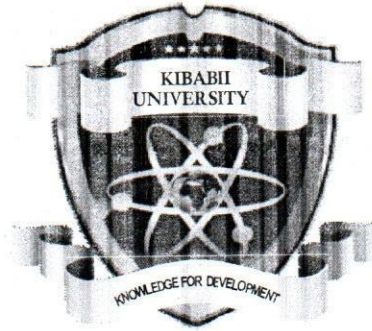


15



(Knowledge for Development)

KIBABII UNIVERSITY
(KIBU)

UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS
YEAR FOUR SEMESTER ONE EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE
(COMPUTER SCIENCE)

COURSE CODE : CSC 462E

**COURSE TITLE : SOFTWARE MEASUREMENT
AND METRICS**

DATE: 14/06/2021 TIME: 02.00 P.M - 04.00 P.M

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO

QUESTION ONE [COMPULSORY] [30 MARKS]

a) Distinguish between the following terms:

(i) Measure and Metrics

[2 marks]

(ii) Ratio and Interval scale

[2 marks]

(iii) Internal and External attributes

[2 marks]

b) Kibabii has contracted you to develop for them a Student Management System. You have planned to assemble your team to work on this project.

i. Explain with examples the three categories software quality metrics that your team is likely to use in this project.

[6 marks]

ii. How will you measure customer satisfaction for the developed system?

[6 marks]

iii. Which activities will your team undertake to ensure Software quality assurance (SQA) for the developed product?

[3 marks]

iv. Suggest the cost and effort estimation models your team will use in this project.

[3 marks]

c) i. What do you understand by a measurement Goal?

[2 marks]

ii. Explain the importance of GQM approach in software engineering projects.

[4 marks]

QUESTION TWO [20 MARKS]

- a) Amatsi Water Services Company is planning to incorporate the use of metrics in assessing performance of its software systems that are being developed. Suggest any Five guidelines to the organization on use of Metrics [10 marks]
- b) You have been appointed as project manager for Uzima University. You have been tasked to determine the level of implementation of an ERP solution in the University. Suggest suitable metrics and illustrate with examples. [10 marks]

QUESTION THREE [20 MARKS]

- a) The success in the software measurement lies in the quality of data collected and analyzed. With the aid of an example answer the following questions:
- i. What will constitute "good data" for your project? [6 marks]
 - ii. Identify any three attributes that will be used to define the data for a system of your choice [3 marks]
 - iii. How will you ensure that your team collects accurate and complete data for your System. [5 marks]
- b) Measurement plays a significant role in software engineering. Explain why it is essential in Software projects? [6 marks]

QUESTION FOUR [20 MARKS]

- a) Explain MacCall's Factor Model as applied in software product development. [9 marks]
- b) Discuss the components of Software Quality Assurance (SQA) that are essential during Software development. [11 marks]

QUESTION FIVE [20 MARKS]

a) i. What do you understand by 'Customer problems Metrics'? [2 marks]

ii. Which Metrics would you construct and use to measure user satisfaction for a software system of your choice. [4 marks]

b) The Table below is application of GQM where Question has be asked. Please fill in possible Metrics part. [14 marks]

S/No	Question	Possible Metric
1	What is the level of requirements stability?	
2	Why are the requirements changed?	
3	<ul style="list-style-type: none"> • What is the cost of changing the requirements? 	
4	<ul style="list-style-type: none"> • Is the number of changes to requirements decreasing with time? 	
5	<ul style="list-style-type: none"> • How many incomplete, inconsistent, and missing, allocated requirements are identified? 	
6	<ul style="list-style-type: none"> • How many other requirements are affected by a requirement change? 	
7	Is the number of to be done (TBD)	