MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS (FCI)

End of Semester One Examination for the Degree of Bachelor of Software Engineering

Course Code:	**SWE 1103**
Course Name:	**Emerging Trends in Software Engineering**
Course Year:	**One**
Academic Year	**2020/2021**
Date:	**18th November, 2021**
Duration:	**Three hours**
Time	**9:00 A.M. – 12:00 P.M.**

Instructions:

1. **The paper has Seven Questions**
2. **Attempt any Five out of the seven questions. Each question carries 20 marks.**
3. **Begin each question on a new page.**
4. **This is not an Open Book Examination – Candidates should not consult any Reference Material During this sitting.**
5. **Any form of Examination Malpractice will be dealt with in accordance with the examination rules and regulations.**
6. **Do not Write anything on the Question Paper- Any kind of rough work should be done at the end of the answer booklet provided.**

Question 1

i. Explain briefly citing **Five** reasons why local software startups in Uganda do not survive within the competitive market for more than two years? (5 Marks)

ii. Umbrella activities occur throughout the software process. Do you think they are applied evenly across the process, or are some concentrated in one or more framework activities? (5 Marks)

iii. List the **Five** activities of a generic process framework. (5 Marks)

iv. How can one use Software engineering skills to make MUST buildings green? (5 Marks)

Question 2

i. What is meant by the term Cross Platform Development? (2 Marks)

ii. Mention Four Advantages and Four disadvantages of Cross- platform development. (8 Marks)

iii. Explain Five cross platform development tools that you know of giving their pros and cons. (10 Marks)

Question 3

i. Mention Five examples of how the law of unintended consequences applies to computer software. (10 Marks)

ii. Many modern applications change frequently before they are presented to the end user and then after the first version has been put into use. Suggest Five ways to build software to stop deterioration due to change. (5 Marks)

iii. Write short notes on any five top trends of Artificial Intelligence. (5 Marks)

Question 4

i. What is meant by Cloud Computing? (2 Marks)

ii. Describe, giving examples, the basic services of Cloud computing. (6 Marks)

iii. As a software engineering scholar, why would you justify the implementation of cloud computing to your employer? (4 Marks)

iv. Briefly explain Four attributes of Cloud networking. (4 Marks)

v. What are the essential characteristics of Cloud computing. (4 Marks)

Question 5

i. Describe Three desired goals of basic software engineering process. (6 Marks)

ii. Explain Four challenges faced by the software engineering process. (4 Marks)

iii. Discuss Four advantages of client-server compared to traditional software. (8 Marks)

iv. Distinguish between Component-based software development and Mobile Computing. (2 Marks)

Question 6

i. What is meant by Software Architecture in regards to Software engineering process. (3 Marks)

ii. What are the of the drawbacks of using a 2- tier Architecture design? (5 Marks)

iii. Software engineering currently tends towards dynamic development of Software Applications meeting clients demands. What pressures does this have on the traditional software development process? (6 Marks)

iv. Looking at the current trends of software applications, what adoption challenges must be put in place to counter ineffective software design models? (6 Marks)

Question 7

i. Describe Five Principles of Service Orientation. (5 Marks)

ii. What was the vision of the Service Oriented Architecture(SOA) implementors in sight of Software Orchestration? (4 Marks)

iii. Explain the Four factors driving the adoption of Service Oriented Architectures here in Uganda. (4 Marks)

iv. Discuss Four challenges of adopting Service Oriented Architectures? (4 Marks)

v. Distinguish between Software as a Service (SaaS) & SOA, considering the key characteristics of both service technologies. (3 Marks)

END

- Networking
- communication
- Resource sharing
- Back up
- security

- risk mgt
- quality
- Deliver on time
- end users problems

→ customer es
→ change and requirements
→ unclear customers
→ Resource shortage