ELIZADE UNIVERSITY, ILARA MOKIN

Faculty of Basic and Applied Sciences

Mathematics and Computer Science Department

First Semester Examination: 2019/2020 Academic Session

Course Code: CSC 207

Course Title: Software Engineering 1

Course Lecturer: Dr Agbele K.K

Duration: 2 hours 30 minutes.

Instruction: Answer Question One and any other Four Questions.

Question 1.

a. A caretaker maintains a rental role for the houses he manages. Whenever a house owner decides to change the rent, he completes a rental change form showing the house number and the new rent. The caretaker enters this information into a microcomputer, which maintains files with the new rental charges and prints out a notice of change rental charges to be sent to each affected house. Draw a process model for this rental activity.

b. Order the following tasks in terms of the waterfall model: acceptance testing, project planning, unit testing, requirements review, cost estimating, high-level design, market analysis, low-level design, systems testing, design review, implementation, requirement specification.

Question 2.

a. Explain the process of calculating completion time and state the algorithm for identifying the critical path

b. Using the information in the table below. Complete it showing all completion times, identify the critical path, and slack time using AON.

ID	Duration	Dependencies
A	6	
B	8	
C	11	A,B
D	5	A
E	8	B
F	2	C,D
G	9	D,E
H	7	F,G
I	3	E,F

Question 3.

a. What is Programmer Productivity?

b. A Programmer recorded this time log.

Date	Start	Stop	Interruptions	Delta	Task
1/2/19	09:00	15:00	30		Code 50 LOC
2/2/19	08:30	16:00	30		Code 60 LOC
3/2/19	09:00	14:00	60		Code 40 LOC
3/2/19	15:30	18:00	30		Code 40 LOC
4/2/19	09:00	12:00			Testing

i Complete the table

ii Calculate the programmer's productivity

iii. Determine how long it will take the programmer to complete a project of 1.6KLOC

Question 4.

a. Define the following; Risk Mitigation, Risk Decision tree, Risk probability, Risk Exposure.

b. Consider two dice. Consider rolling a 5 or 7 as an undesirable event that would make you lose a sum of #2,500. Calculate the risk probability and the risk impact of rolling a 5 or 7. Calculate the risk exposure.

Question 5.

a. State the rules for correct process models.

b. Suppose there are two actors: the tester and the team leader. The unit tester is responsible for unit testing. The unit tester uses the source code and the test plan to accomplish unit testing. The result of this activity is an artifact, the test results.

- Draw the process model for the unit testing software
- Draw the process model with decisions

c. List and explain the seven (7) types of testing.

Question 6.

a. Discuss in details any 2 of the mentioned software development lifecycle models. (The Linear Sequential Model, The Prototyping Model, Incremental Model, Boehm's Spiral Model)

b. Discuss the Phases of the Design Process

c. Two approaches to design are known as refinement and modularity. Define these concepts.