University of Eswatini

Department of Computer Science

Final Examination

2018/19

Title of Paper: Software Engineering I/Practices in Software Engineering I

Course Number: CS451/CSC392

Time Allowed: Three (3) hours

Instructions: **ANSWER ALL QUESTIONS**

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You are not allowed to open this paper until you have been told to do so by the invigilator.

Question 1

a) Discuss the activities that take place in each of the following phases:

    i)   Requirements Analysis   [5]

    ii)   Design   [5]

    iii)   Implementation   [5]

    iv)   Testing   [4]

b) Name and discuss any three types of risk you have come across in this course. [6]

Question 2

a) Discuss the symmetric model in detail. State how it is different from the sequential and waterfall models. [15]

b) A well written SRS is expected to have a number of qualities. Among them are traceability, design independence and conciseness. Discuss the meaning of these three qualities. [6]

c) In ER modeling, the quantification of relationships are known as mappings, name any four (4) of these mappings. [4]

Question 3

a) In the table below, establish the start and end dates for C, D, E, F, G and H. [6]

Task (Activity)	Duration (days)	Start date	End date	Cost per day (Emalangeni)	Predecessor
A	5	20 may	24 may	100	-
B	3	20 may	22 may	75	-
C	9			90	A
D	5			20	A, B
E	7			42	-
F	2			56	D, E
G	7			30	A
H	6			55	A, C, F

b) Use the table above to draw a Gantt chart and a PERT diagram. [5+10]

c) Based on what you have done in b), determine the ECT and the Critical Path. [4]

Question 4

a) How is an evolutionary prototype different from a throwaway prototype? [3]

b) Discuss your understanding of Data Flow Modelling. [9]

c) The highest level (level 0) DFD is called a context diagram, state your understanding of this level 0 diagram. [4]

d) Draw a decision tree using the scenario below. [9]

A child under 3 years of age is to be charged 5% of the admission fee. A person under 18 years is to be charged half of the full admission fee expect on Mondays (MAHHALA MONDAY SPECIAL) where they are expected to pay 40% of the admission fee. However if a child under 7 years is accompanied by a parent then the charge is a quarter of the full admission fee, a third if by a teacher or guardian. For persons over 18 years, a full admission fee is to be charged except for students who are to be charged half the full admission fee and senior citizens (over 60) who are to be charged a third of the full admission fee. A 10% discount applies to all persons subject to full admission charge, who are members of any nature conservation association. They must be active members of such associations in order to get the discount. Students affiliated with such associations will pay a quarter of the admission fee.

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