

North East University Bangladesh

Department of Computer Science and Engineering

Semester Final Examination Summer 2022

Program: B.Sc. (Eng.) in CSE

Course: CSE 413(Web Engineering)

Total Mark: 40

Total Time: 2 Hrs

Instructions: Answer any four questions from the following.

NB: FIGURES IN THE MARGIN INDICATE FULL MARKS

Try to answer parts of a question together.

1. Consider the following questions:

- a. What are the job responsibilities of a project manager? 2
- b. Describe the types of risks with proper examples. 3
- c. Explain the organic, semi-detached and embedded projects with proper examples. 5

2. Consider the following questions:

- a. What is risk management? Give an example of a risk in a software project. 2
- b. Differentiate between function oriented design and object oriented design. 3
- c. A software was tested using the error seeding strategy in which 25 errors were seeded in the code. When the code was tested using the complete test suite, 20 of the seeded errors were detected. The same test suite also detected 400 non-seeded errors. What is the estimated number of undetected errors in the code after this testing and what is the total number of errors in the system? 5

3. Consider the following questions:

- a. Show the diagram of precedence ordering. 2
- b. Differentiate between reactive and proactive risk management strategies. 3
- c. Consider a software project using semi-detached mode with 120000 lines of code. Estimate the effort, duration and person required for the project. (all the values of constants are given below). 5

Software projects	a1	a2	b1	b2
Organic	2.4	1.05	2.5	0.38
Semi-detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

4. Consider the following questions:

- a. What is Person Month (PM)? 2
- b. Explain alpha testing, beta testing and acceptance testing. 3
- c. Differentiate between black box testing and white box testing. 5

5. Consider the following questions:

- a. Explain the constructive cost model (COCOMO). 2
- b. Differentiate between verification and validation in software engineering. 3

- c. Do CPM (Critical path method) analysis and identify the critical path of the following project.

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Activity	Predecessor	Duration(in weeks)
A	-	3
B	A	5
C	A	7
D	B	10
E	C	5
F	D,E	4

6. Consider the following questions:

- a. Explain the regression testing. 2
- b. Explain the big bang, top down, bottom up and sandwich testing. 4
- c. Fill in the following box: 4

Mode	Project Size	Nature of Project	Innovation	Deadline of project	Development Environment
Organic					
Semi-Detached					
Embedded					