

# North East University Bangladesh

Department of Computer Science & Engineering

Mid Semester Examination, Spring-2022

Program: B.Sc(Engg) in CSE

Course Code: CSE 333

Course Title: Software Engineering

Marks: 30

Time: 90 minutes

[NB: FIGURES IN THE MARGIN INDICATE FULL MARKS]

1. *There has been a description for a company that wants to make an application. Please read it carefully and answer any four questions from the following.*

Let's assume that a company, ABC wants to make a new web browser. The deadline for the task is 300 days (10 months). The company's head assigns two teams, Team A and Team B. Now, Team A has decided to follow the plan described below:

- Requirement analysis – 45 days (1.5 months)
- Design of system – 75 days (2.5 months)
- Coding – 120 days (4 months)
- Testing – 60 days (2 months)

Finally, they will deliver the project.

Team B has chosen the customer interactions system. They decided to do adequate discussions with the client; however, they did not publicly mention their development process.

On the 295<sup>th</sup> day, suddenly, the company's head came up with an entirely new set of features and wanted to implement them as quickly as possible and push out a working model in 2 days. Team A is now in huge trouble. Indeed, they will not be able to deliver the exact project in time. On the other hand, requirement changing is a piece of cake for Team B.

- a) For Team A, what do you think for which model delivering software would be challenging? Describe the model. 2+3=5
- b) i. If it exists, identify and modify the problems with planning for Team A. Mention the reasons for the modification. 3
- ii. What do you understand by 'Engineering Approach' to developing software? 2
- c) i. Do you believe the software prototype design will act as a recovery plan for Team A to respond to the sudden changes from the customer? Give your opinion with appropriate reasons. 3
- ii. What is the difference between Team A and Team B in their existing approaches? 2
- d) Why are the changing requirements easy for Team B? How can they manage their dynamic changes? 3+2=5
- e) i. Write the drawbacks for Team B if they approach quickly changing the customer requirements. 2
- ii. Evaluate Team B's activity if they want to analyze the risks of their project. 3
- i. Explain the software specification process for Team A. 3
- ii. Which testing stages are required for Team A and B before releasing 2

their software to the customer?

2. *There has been a description of a professor who wants to order a book online. Please read it carefully and answer any two questions from the following.*

Each page of the system will load in an acceptable time frame. A professor user will register to the system by providing his username, password, and other relevant information such as name, date of birth, and contact number. A confirmation message will go to his mail after he successfully signs in. The professor will log into his account and make order desired books that he needs. Finally, he will make payment for his ordered books.

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|----|-----|--|-------|
| a) | i.  | What are the attributes of a good software?  | 2     |
|    | ii. | Which attribute will be contradicted if the professor's system is not loaded in an acceptable time frame? Explain why.     | 3     |
| b) |     | What are the issues that affect most of the software? How can you ensure the heterogeneity of the professor's application? | 2+3=5 |
| c) | i.  | Which software type is the most relevant to the professor's application?   | 1     |
|    | ii. | Design a prototype compliant with the requirement above.   | 4     |
| d) | i.  | Analyze the security issues that might occur on the professor's software.  | 3     |
|    | ii. | Write some test cases to test and assure trust of the professor's specification?   | 2     |