Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 07

B.Sc (Computer Science) (Sem.–5)

SOFTWARE ENGINEERING

Subject Code : BCS-506

M.Code : 72579

Date of Examination : 23-12-22

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. Write briefly :

a. What are the main differences between a student software and industrial strength software?

b. What measurements will you take in a software project to measure the productivity, and how will you determine the productivity from these measures?

c. What is the relationship between a process model, process specification, and process for a project?

d. Which of development process models would you employ for the following projects :

i. A data entry system for office staff who have never used computers before. The user interface and user friendliness are extremely important.

ii. AWeb-site for an on line store which has a long list of desired features it wants to add, and it wants a new release with new features to be done very frequently.

e. What is the role of effort estimation in a project, and why is it important to do this estimation early?

f. Given a design that implements the SRS, what criteria will you use to evaluate the quality of this design?

g. Explain the process of requirements analysis.

h. Write a brief note on CASE.

i. Is unit testing possible or even desirable in all circumstances? Provide examples to justify your answer.

j. Write down the software equation and explain how it is used.

SECTION-B

2. Discuss prototyping in detail. Provide three examples of software projects that would be amenable to the prototyping model. Differentiate between evolutionary and throwaway prototyping and discuss their merits and demerits.

3. Describe software architecture in your own words. Briefly describe each of the four elements of the design model. What makes software design different from coding?

4. Discuss different approaches to software sizing problem. Explain how LOC and FP data are used during software project estimation. Discuss their advantages and disadvantages.

5. Differentiate between white box testing and black box testing. Explain the process of unit testing in detail. Why is a highly coupled module difficult to unit test?

6. What types of errors are detected by boundary value analysis and equivalence class partitioning techniques? Explain using suitable examples. Write a module to compute the factorial of a given integer N. Design the test cases using boundary value analysis and equivalence class partitioning technique.

7. Discuss the process of software reverse engineering. List the goals of reverse engineering. Differentiate between reverse and forward engineering.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.