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**Presidency University**

**Bengaluru**

 **SCHOOL OF Information Science**

**Make-Up Examinations, Sep 2023**

**Winter Semester**: 2022 - 23

**Course Code**: BCA210

**Course Name**: Software Engineering

**Program**: BCA

**Date**: 30-SEP-2023

**Time**: 9.30 AM – 12.30 PM

**Max Marks**: 100

**Weightage**: 50%

 **Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

**Part A [Memory Recall Questions]**

**Answer all the Questions. Each question carries FIVE marks. (4Qx 5M= 20M)**

1. List and discuss the Code of Ethics to be followed by the software engineers [C.O. No. 1] [Knowledge]

2. Define and compare functional and non-functional requirements. [C.O. No. 2] [Knowledge]

3. Explain about any two golden rules of user interface design [C.O. No. 3] [Knowledge]

4. What is boundary value analysis? Explain with an example. [C.O. No. 4] [Knowledge]

**Part B [Thought Provoking Questions]**

**Answer all the Questions. Each question carries FIFTEEN marks (4Qx15M=60M)**

5. Global Software limited is developing a project based on the customer’s requirements. The customer has provided well-defined requirements to the developer. The developer is unsure whether to use the waterfall model or the Iterative waterfall model. Help the developer by comparing both models and justify which model will be more suitable here. [C.O. No. 1] [Comprehension]

6. “SRS document describes all aspects of a software to be built”. Justify the above statement and develop a sample SRS document. [C.O. No. 2] [Comprehension]

7. Mr. Joseph wants to transfer money to his wife from his bank account. For completing this transaction, he needs to enter an OTP. The OTP should be between 4 to 6 digits/number. Using Equivalence Partitioning and Boundary value analysis techniques, find and generate the test cases for valid and invalid OTP. [C.O. No. 3] [Comprehension]

8. The Karnataka government is planning to launch a website to collect the grievances of its citizens. The project was given to your company and your team has prepared an estimate of time required as given below. Develop a network model for the same and calculate the time required, span and float.

|  |  |  |
| --- | --- | --- |
| **Activity** | **Duration(days)**  | **Predecessor** |
| Establish project | 4 |   |
| Customer requirements | 6 |   |
| Software specification | 4 | B |
| Write code and test plans | 12 | A |
| Testing | 7 | A |
| System testing | 9 | B |
| deployment | 5 | E,F |

[C.O.No. 4] [Application level]

**Part C [Problem Solving Questions]**

**Answer all the Questions. Each question carries TWENTY marks. (1Qx20M=20M)**

What is Cyclomatic Complexity? Draw the Control Flow Graph (CFG) for the following code:

min = A[0];

 I = 1;

 while (I < N) {

 if (A[I] < min)

 min = A[I];

 I = I + 1;

 }

 print min

Compute the Cyclomatic Complexity of the resultant CFG of the above code and list out the number of paths. [C.O. No. 4)] [Application]