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**PRESIDENCY UNIVERSITY
BENGALURU**

SET B

**SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2024**

Semester : Semester III - 2022
Course Code : CSE2014
Course Name : Software Engineering
Program : B.Tech.

Date : 04-JAN-2024
Time : 9:30AM - 12:30 PM
Max Marks : 100
Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.
 - (ii) Question paper consists of 3 parts.
 - (iii) Scientific and non-programmable calculator are permitted.
 - (iv) Do not write any information on the question paper other than Roll Number.
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PART A

ANSWER ALL THE QUESTIONS

5 X 2M = 10M

1. What is a software?
(CO1) [Knowledge]
2. What are the challenges involved in agile software development?
(CO2) [Knowledge]
3. Define Sprint Review
(CO3) [Knowledge]
4. Compare Unit Testing with Integration Testing.
(CO4) [Knowledge]
5. Define verification and validation
(CO4) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

5 X 10M = 50M

6. Compare and Contrast the two types of waterfall model with neat sketches and also discuss the merits and demerits of each model.
(CO1) [Comprehension]

7. Imagine you are designing the use case diagram for an online banking website. The banking website allows a customer to create a new savings account. There are also options for requesting loans and starting a fixed deposit. Elaborate the above system with suitable actors, and implement use cases with suitable extends and include relationships.

(CO2) [Comprehension]

8. Why did we need DevOps? Elaborate DevOps Architecture steps and tools with neat sketches.

(CO3) [Comprehension]

9. Mr. Joseph wants to transfer money to his wife from his bank account. For completing this transaction, he needs to enter 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.

(CO4) [Comprehension]

10. Discuss why Agile methodology is used to develop the software projects. Justify.

(CO4) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

2 X 20M = 40M

11. In the Web, the site user wants to search for documents, browse documents, and view events. These are the functionality the user wants to do. The download and preview documents are the use cases too, and they are in relation to each other based on user requirements. The webmaster upload documents, post new events to the homepage and add a user and these use cases are in relation with the managed folders and add company but still based on what the actor wants. Draw use case diagram for the above scenario.

(a) Choose a list of actors and use cases from the problem statement provided above.

(b) Develop a use case diagram for the above scenario.

(CO2,CO1) [Application]

12. 2. Consider the code given below and answer the questions that follow based on the code.

```
public double calculate(int amount)
{
double rushCharge = 0;
if (nextday.equals("yes") )
{
    rushCharge = 14.50;
}
double tax = amount * .0725;
if (amount >= 1000)
{
    shipcharge = amount * .06 + rushCharge;
}
else if (amount >= 200)
{
    shipcharge = amount * .08 + rushCharge;
}
else if (amount >= 100)
{
    shipcharge = 13.25 + rushCharge;
}
else if (amount >= 50)
{
    shipcharge = 9.95 + rushCharge;
}
else if (amount >= 25)
{
    shipcharge = 7.25 + rushCharge;
}
else
{
    shipcharge = 5.25 + rushCharge;
}
total = amount + tax + shipcharge;
return total;
} //end calculate
```

- I. Identify nodes
- II. Construct a control flow graph of the code.
- III. Identify CCN
- IV. list independent paths in the CFG.

(CO3,CO4) [Application]