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PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF COMPUTER SCIENCE & ENGINEERING

MAKE UP EXAMINATION - JULY 2024

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| **Semester : II & V** | **Date : 04-07-2024** |
| **Course Code :CSE227/CSA2006** | **Time :9:30AM -12:30 PM** |
| **Course Name : FUNDAMENTALS OF SOFTWARE ENGINEERING/ SOFTWARE ENGINEERING & PROJECT MANAGEMENT** | **Max Marks : 100** |
| **Program : B.TECH / BCA** | **Weightage : 50%** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

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| **PART A** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 2M=10M** | | | |
| 1 | Explain any two types of software with the help of an example each. | (CO 1) | [**Remember]** |
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| 2 | Give a diagram for the Spiral model and also give the diagram for the same. | (CO 1) | [**Remember]** |
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| 3 | Give a state transition diagram of a Vending Machine. | (CO 2) | **[Apply]** |
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| 4 | Explain the process of basic path testing. | (CO 3) | [**Understand]** |
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| 5 | What is the difference between black-box testing and white-box testing? Provide a brief example of when each might be used in software testing. | (CO 3) | [**Understand]**] |
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| 6 | Organic software occupies 15,000 LOC. **Determine** how many programmers are needed to complete. | (CO 4) | [**Apply**] |
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| 7 | **Show** the basic principles that guide software project scheduling. | (CO 4) | [**Apply**] |
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| **PART B** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 10M=50M** | | | |
| 8 | Explain alteast one scenario where   * 1. RAD model would be applicable and not the waterfall model.   2. waterfal model is preferable compare to all other models. | (CO 1) | [**Remember]** |
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| 9 | Discuss the Extreme Programming process. What are some of the issues that lead to an XP debate? | (CO 1) | [**Remember]** |
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| 10 | **Classify** the following as functional /non-functional requirements for a banking system   1. Verifying bank balance 2. Withdrawing money from bank 3. Completion of transactions in less than one second. 4. Extending the system by providing more tellers for the customers. | (CO 2) | **[Apply]** |
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| 11 | What is black box testing? **Explain** the different types of black box testing strategies. Explain by considering suitable examples. | (CO 3) | [**Understand]** |
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| 12 | 1. What is cyclomatic complexity and what are the ways to compute it? 2. **Give** the steps to select the path in data flow testing. 3. **Explain** how the various types of loops are tested. | (CO 3) | [**Understand]** |
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| 13 | **Develop** a program for sorting of n numbers. Draw the flow chart, Flow graph, find out the cyclomatic complexity. | (CO 4) | [**Apply**] |
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| 14 | **Apply** COCOMO-II model to estimate total time and effort required to develop a software of KLOC 230.  (ii) **Outline** the importance of "project scheduling and use of Gantt charts". | (CO 4) | [**Apply**] |
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| **PART C** | | | |
| **ANSWER ANY 2 QUESTIONS 2Q X 20M=40M** | | | |
| 15 | **Consider** that you are the technical manager of a software development organization. A Client approached you for a software solution the problems stated by the client have uncertainties which lead to loss if it not planned and solved which software development model you will suggest for this project –justify. **Explain** that model With its pros and cons and neat sketch. | (CO 1) | [**Apply**] |
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| 16 | **Consider** the pseudocode for simple subtraction given below:  Program ‘Simple Subtraction’  Input (x,y) Output(y)  If x> y then DO x-y=z  else y-x=z endif output(z)  output ‘End Program’  perform the basic path testin and generate test cases .Explain black box and white box testing. | (CO 3) | [**Apply**] |
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| 17 | **Explain** in detail about COCOMO model for software cost estimation. Use it to estimate the effort required to build software for a simple ATM that produces 12 screens, 10 reports and has 80 software components. Assume average complexity and average developer maturity .Use application composition model with object points. | (CO 4) | [**Apply**] |