**JALPAIGURI GOVERNMENT ENGINEERING COLLEGE**

**[A GOVERNMENT AUTONOMOUS COLLEGE]**

**JGEC/B.TECH. /Dept- CSE /Paper Code- CS502/2019-20**

**2019**

**SOFTWARE ENGINEERING**

Full Marks: 70 Times: 3 Hours

*The figures in the margin indicate full marks.*

*Candidates are instructed to write the answers in their own words as far as practicable.*

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| **GROUP-A**  **[OBJECTIVE TYPE QUESTIONS]**  Answer ***all*** questions 5x2=10 | | |
| 1. | What is software matrix? Give example. | 2 |
| 2. | Why SRS Document is called Black Box specification? | 2 |
| 3. | What do you mean by Maintenance of a software product? | 2 |
| 4. | What is context diagram? | 2 |
| 5. | Define Cyclomatic Complexity. | 2 |
| **GROUP-B**  **[LONG ANSWER TYPE QUESTIONS]**  Answer any ***four*** questions 4x15=60 | | |
| 6. | 1. Explain prototyping model. Write down the drawbacks of prototyping model. Explain the situation, where it can be useful? 2. What is software risk? Explain the different activities of Risk Management. 3. Define phase containment of error. | 3+3+2  1+5  1 |
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| 7. | 1. Using Putnam’s method show, how estimated effort varies with development time. 2. What do you mean by size of a software project? Explain the characteristic curves of estimated effort and development time with respect to project size. 3. What will be the structure of a software development organization? | 5  2+5  3 |
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| 8. | 1. What is independent module? Write down its advantages. 2. What is cohesion? Explain different types of cohesions with examples. 3. Consider a software project with 5 tasks T1-T5. Duration of the 5 tasks (in days) are 15,10,12,25 and 10 resp. T2 and T4 can start when T1 is complete. T3 can start when T2 is complete. T5 can start when both T3 and T4 are complete. 4. Draw the activity network 5. When is the start date of the task T3? 6. What is the slack time of the task T4? 7. Find the critical path | 1+2  2+5  2+1+1+1 |
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| 9. | 1. What is code review? Differentiate between code walk through and code inspection. 2. Write down the different approaches of black-box testing. 3. Explain the different types of integration testing? Which types of defects are covered during integration testing? 4. “System testing can be considered a pure black-box test”. Justify your answer. | 1+3  4  4+1  2 |
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| 10. | 1. What do you mean by balancing a DFD? Write down the characteristics of a good SRS document 2. Write down the difference between function-oriented design and function-oriented design. 3. What is UML? Explain Use Case diagram, collaboration diagram and activity diagram with example. | 2+3  3  1+6 |
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| 11. | 1. What do you mean by quality of a software product? How quality of a software product can be measured? 2. Differentiate between Software Verification and Software Validation. 3. Write down the differences between control flow diagram and data flow diagram | 2+3  3  4  3 |
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| 12. | Write short notes on any ***three***   1. Data Flow-based Testing 2. Halstead software science 3. Software Configuration Management 4. Decision Tree & Decision Table 5. Performance Testing | 5x3=15 |
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