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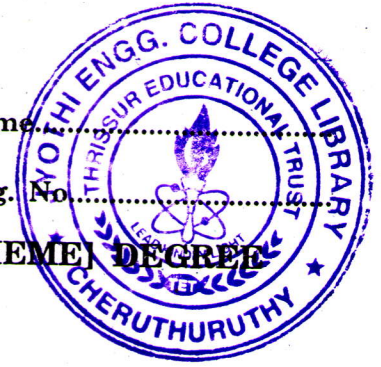
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FIFTH SEMESTER B.TECH. (ENGINEERING) [14 SCHEME] DEGREE EXAMINATION, NOVEMBER 2016

CS/IT 14 502—SOFTWARE ENGINEERING

Time : Three Hours   Maximum : 100 Marks

Part A

Answer any **eight** *questions.*

1. Explain the similarity and difference between Hardware and software products.

2. Discuss about the characteristics and applicability of incremental model.

3. What do you mean by software requirements engineering function ? Discuss.

4. Discuss the role of functional independence in effective modular design.

5. Draw an use case diagram for ATM interaction.

6. Explain the golden rules to be considered while designing a user interface.

7. Why testing important ? Discuss how you would test the control structure in the programs.

8. What is a SCM repository ? Explain its role in change management.

9. Do a functional decomposition of online shopping software and estimate the size of each function in LOC. Assuming that your organization produces 450 LOC/pm with a burdened labor rate of $7000 per month, estimate the cost and effort required to build the software using the LOC-Based estimation technique.

10. What are software risks ? How does risk component and drivers help in projecting risk ?

(8 × 5 = 40 marks)

Part B

Answer **all** *the questions.*

11. Explain the evolutionary software development model. List its pros and cons.

Or

12. Develop a SRS document for any software system of our choice. Specify the assumptions and the required functionalities clearly.

13. Develop CFDs, CSPECs, PSPECs and Data dictionary for a web based order processing system.

Or

14. What are the components of analysis and design model? Describe the mapping from analysis model to design model.

Turn over

15. Describe the following

    (a) Orthogonal array testing.   (7 marks)

    (b) Equivalence Partitioning.   (8 marks)

Or

16. Write the code for performing binary search of an element in an array. Draw the flow graph and determine the cyclomatic complexity, list the basis path and prepare a test case for one path of the above problem.

17. (a) Compare the features of different team structures.   (8 marks)

    (b) Enumerate the role of a project manager.   (7 marks)

Or

18. (a) Explain how earned value analysis is used for assessing the progress of a project ?

(10 marks)

    (b) Use COCOMO II model to estimate the effort required to build software for a simple ATM that 12 screens, 10 reports and will require approximately 80 software components. Assume average complexity and average developer/environment maturity. Use the application composition model with object points.(complexity weight for screens - 2, reports - 5, components - 10 and PROD for average developer/environment maturity = 13).

(5 marks)

[4 × 15 = 60 marks]