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M. Tech. I - Sem. (Main) Exam., Dec. - 2018

Computer Science & Engineering

1MCS2 Software System Design

Time: 3 Hours

Maximum Marks: 100
Min. Passing Marks: 33

Instructions to Candidates :

*Attempt any **five questions**, Marks of questions are indicated against each question. Draw neat and comprehensive sketches wherever necessary to clearly illustrate your answer. Assume missing data suitable if any and specify the same. Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL _____   2. NIL _____

Q.1 (a) Outline the role of UML in the development of software models. Also focus how object oriented software development and UML modelling and related with each other. [10]

(b) Focus upon the importance of Agile Software Development in modern software development scenario with a suitable example. [10]

Q.2 (a) Explain the significance of software configuration management being applied as umbrella activity throughout software development life cycle. [10]

(b) Compare and contrast, the use of "off the shelf" and "customized software" based software development for organizational needs. [10]

Q.3 (a) Explain the "Lines of Code" and "Function Points" based software cost estimation matrices [10]

(b) What are the important aspects related with use-case modelling of software? Explain with a suitable example. [10]

Q.4 (a) Compare and contrast between the terms "Maintenance" and "re- engineering" of existing software using a suitable example. [10]

(b) Explain the five levels of Capability Maturity Model as applied to Software Process Improvement. [10]

Q.5 (a) In the context of modern software development techniques, focus upon the importance of Beta Testing and Regression Testing. [10]

(b) What is "Cyclomatic Complexity" of software? What is its significance in the design of Test-Cases for software testing? [10]

Q.6 (a) Using a suitable example, focus upon the role of "Baseline" in Software Configuration Management. http://www.mgsuonline.com [10]

(b) Compare and contrast between "Top-down" and "Bottom-up" approach for software development. [10]

Q.7 (a) Explain why Software Quality Assurance is considered as an Umbrella activity to be applied throughout Software Development Life Cycle. [10]

(b) Explain how version control is an integral part of software configuration management. Also define the term "Beta Version" of software. [10]

Q.8 Explain the desirable attributes of effective software matrices. Also discuss the types of metrics used for requirement, design, cost-analysis and testing purposes. [20]