Code No: 115EM **R13**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November - 2015
SOFTWARE ENGINEERING
(Common to CSE, IT)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A **(25 Marks)**

1.a)	What is an agile process? Explain.	[2]
b)	What is the difference between a UP Phase and a UP Workflow?	[3]
c)	What is the intent of requirements validation?	[2]
d)	What are the characteristics of good SRS document?	[3]
e)	Differentiate between coupling and cohesion.	[2]
f)	How do we assess the quality of software design?	[3]
g)	What is Cyclomatic complexity? What is its purpose?	[2]
h)	What are the metrics used for software maintenance?	[3]
i)	What is software reliability? Define.	[2]
j)	Can a program be correct and still not exhibit good quality? Explain.	[3]

PART - B **(50 Marks)**

2.a) What is the purpose of process assessment? Why has SPICE been developed as a standard process assessment?

b) Explain Spiral model with a neat sketch. What can you say about the software that is being developed or maintained as you move outward along the spiral process flow? [5+5]

OR

3.a) What are the five generic process framework activities? Explain.

b) Explain different levels of Capability Maturity model and list the KPA's of each level. [5+5]

4.a) What is the goal of requirements analysis phase? Give reasons why the requirements analysis phase is a difficult one.

b) Briefly explain the models used for structured analysis. [5+5]

OR

5.a) Differentiate between functional and non-functional requirements with suitable examples.

b) "Data Modeling can be viewed as a subset of OOA." Comment on this statement and justify your comments. [5+5]

6.a) How are the concepts coupling and software portability are related? Provide examples to support your discussion.

b) Explain the process of mapping data flow into software architecture. [5+5]

OR

7.a) Write the taxonomy of architectural styles and give a brief description of each style.

b) State and explain the generic tasks that are always performed in user interface design. [5+5]

8.a) What is the need of software testing? What are its main objectives and principles?

b) Describe Boundary Value Analysis (BVA) testing for software. [5+5]

OR

9.a) What are the main objectives of Software verification and validation? Briefly explain different V and V techniques.

b) Discuss the software metrics that can be applied to the qualitative assessment of software quality and the side effects that occur during maintenance phase. [5+5]

10.a) Explain ISO 9126 quality model with a neat sketch.

b) Explain various software quality standards and discuss how to assure them. [5+5]

OR

11.a) Explain the factors that affect software quality.

b) List the major risks in a software project. What are the major ways to abate the risk of cost and schedule overruns? [5+5]

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