Software Engineering

Previous Question Papers

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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Code No: 115EM **R13**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech III Year I Semester Examinations, February/March - 2016
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)	Distinguish between software process and project.	[2]
b)	Discuss about changing nature of software.	[3]
c)	What is meant by system requirements?	[2]
d)	Explain about context models.	[3]
e)	Write brief notes on data design.	[2]
f)	Write about interface design evaluation.	[3]
g)	What is meant by debugging?	[2]
h)	What is meant by software measurement?	[3]
i)	What is meant by software reliability?	[2]
j)	Discuss the reactive risk strategy.	[3]

Part- B

(50 Marks)

2.	State and explain various software myths.	[10]
	OR	
3.	Explain about specialized process models.	[10]
4.	Explain clearly about software requirements document.	[10]
	OR	
5.	State and explain various aspects in requirements validation process.	[10]
6.	Discuss about mapping dataflow into software architecture.	[10]
	OR	
7.	Explain about conducting component level design.	[10]
8.	Discuss about metrics for design model and source code.	[10]
	OR	
9.	Explain clearly about metrics for software quality.	[10]
10.	Explain about formal technical reviews.	[10]
	OR	
11.	Explain about risk projection and risk management.	[10]

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Code No: 125EM **R15**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November/December - 2017
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)

	Distinguish between Software products and Software services.	[2]
b)	Explain Software Crisis.	[3]
c)	Define an Interface.	[2]
d)	Explain about data models.	[3]
e)	What are the golden rules for User Interface Design?	[2]
f)	Explain the Design concept coupling.	[3]
g)	Define Testing.	[2]
h)	List the metrics for Design model.	[3]
i)	Define Risk Refinement.	[2]
j)	Define Software reliabilty.	[3]

PART - B

(50 Marks)

2.a)	What is a Legacy Software? Explain.	
b)	Explain the Software Process Framework.	[5+5]
	OR	
3.a)	Explain the various software myths.	
b)	Explain the working of specialized process models.	[5+5]
4. a)	Explain the structure of Software Requirements document.	
b)	What are the feasibility studies for requirements engineering process?	[5+5]
	OR	
5.	Explain the following system models: a) Object Models b) Structured methods.	[5+5]

Code No: 125EM **R15**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, May/June - 2019
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)	Define software engineering.	[2]
	b)	List evolutionary process models.	[3]
	c)	Differentiate between user requirement and system requirement.	[2]
	d)	List the various types of feasibility studies.	[3]
	e)	What are the goals of the design process?	[2]
	f)	Define software architecture.	[3]
	g)	What is meant by smoke testing?	[2]
	h)	List the metrics for source code.	[3]
	i)	Give the different categories of risks.	[2]
	j)	What is meant by software review?	[3]

PART - B

(50 Marks)

2. Discuss managers myths about software development and their effect on the practitioners performance as well as on overall outcome. [10]

OR

3. What is software process? What is need of software process improvement? Discuss capability maturity models. [10]

4. "The functional requirements specification of a system should be both complete and consistent". Substantiate this statement with relevant examples. [10]

OR

5. a) Draw a context level model for a web-based food- ordering system such as "Swiggy".
   b) Discuss the main characteristics of data model for requirement engineering. [5+5]

6. How to translate the analysis model into the design model? Explain with an example scenario. [10]

OR

7. a) Explain how to map data flow into a software architecture?
   b) Explain the design of class based components. [5+5]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, May - 2018
SOFTWARE ENGINEERING
(Common to CSE, IT)

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

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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)

	What is Software Development Life Cycle?	[2]
b)	Mention some of the factors to be considered during System modelling.	[3]
c)	What is meant by Requirement management?	[2]
d)	Differentiate between data flow diagram and state transition diagram.	[3]
e)	List the principles of a software design.	[2]
f)	What are the quality parameters considered for effective modular design?	[3]
g)	What is the role of cyclomatic complexity in software resting?	[2]
h)	Define black box testing strategy?	[3]
i)	Distinguish between reactive and proactive risk management.	[2]
j)	Write short note on RMMM.	[3]

PART - B

(50 Marks)

2.a)	What are the advantages of layered technology?	
b)	Give CMMI levels and explain.	[5+5]
	OR	
3.a)	How does system engineering differ from software engineering? Also write brief notes on computer based system and system engineering hierarchy.	
b)	Explain in detail Evolutionary process model.	[5+5]
4.a)	Why is traceability an important aspect of requirement management? Why context system models are useful for requirements validation?	
b)	Explain about the cardinality and modality with suitable example.	[5+5]
	OR	
3.	Give an overview of various steps in requirements engineering process.	[10]
6.a)	Write about architectural styles and patterns.	
b)	Explain interface analysis and interface design steps.	[5+5]
	OR	
7.a)	How a component is designed based on function ? Explain.	
b)	What are the golden rules for user interface design? Explain.	[5+5]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November/December - 2016
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)**

	What is legacy software? Explain.	[2]
b)	What are the advantages of unified process?	[3]
c)	Write the purpose of context model.	[2]
d)	What is the significance of feasibility study?	[3]
e)	What is the use of interface analysis? Explain.	[2]
f)	What do you mean by software design quality? Explain.	[3]
g)	Differentiate between verification and validation.	[2]
h)	What is regression testing? Give example.	[3]
i)	Define software reliability.	[2]
j)	What is the importance of software reviews?	[3]

PART - B **(50 Marks)**

2.a)	Discuss about the changing nature of software	
b)	Explain spiral model with its merits and demerits.	[5+5]
	OR	
3.a)	Discuss in brief about different software myths and their consequences.	
b)	Explain CMMI model with a neat sketch.	[5+5]
2.a)	Differentiate between functional and non-functional requirements.	
b)	List and explain the object models in brief.	[5+5]
	OR	
5.a)	What are the activities of requirements elicitation and analysis? Explain.	
b)	Discuss about different structured methods used in software development.	[5+5]
6.a)	Explain the process of mapping dataflow into software architecture.	
b)	List the golden rules of user interface design.	[5+5]
	OR	
7.a)	Discuss about pattern based software design in detail.	
b)	Define and explain about different types of cohesion.	[5+5]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November/December - 2018
SOFTWARE ENGINEERING
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Time: 3 hours **Max. Marks: 75**

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PART - A

(25 Marks)

What are the merits of incremental model? [2]
b) List the task regions in the spiral model. [3]
c) What is feasibility study? [2]
d) What are the differences between functional requirements and non-functional requirements? [3]
e) List the guidelines for data design. [2]
f) Name the commonly used architectural styles. [3]
g) Write a short note on black box testing. [2]
h) How to compute the cyclomatic complexity? [3]
i) Differentiate between reactive risk and proactive risk strategies. [2]
j) What is software reliability and how this parameter helps in managing software quality? [3]

PART - B

(50 Marks)

2.a) What is legacy software? Explain briefly its impact in software engineering.
b) Explain the following:
i) Water fall model
ii) Spiral Model. [5+5]

OR

3.a) Give an overview of unified process model.
b) Write detailed notes on CMMI. [5+5]

4.a) Describe five desirable characteristics of a good software requirement specification document.
b) Draw the complete DFD at least up to 2-levels for a library management system. [5+5]

OR

5.a) Compare ISO and SEI-CMM models.
b) Who should be involved in a requirement review? Draw a process model showing how a requirements review might be organized. [5+5]

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PART - A **(25 Marks)**

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]

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Code No: 115EM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, March - 2017
SOFTWARE ENGINEERING
(Common to CSE, IT)

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

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PART - A

(25 Marks)

	What are the merits of incremental model?	[2]
b)	What are the fundamental activities of a software process?	[3]
c)	Differentiate ERD and DRD.	[2]
d)	What are non functional requirements?	[3]
e)	Define design process.	[2]
f)	List the principles of a software design.	[3]
g)	Distinguish between verification and validation.	[2]
h)	Write about drivers and stubs.	[3]
i)	Give a note on the various estimation techniques.	[2]
j)	Define maintenance. What are the types of software maintenance?	[3]

PART - B

(50 Marks)

2.a)	Define the term Software. Describe its various characteristics.	
b)	Elaborate on the changing nature of software in detail.	[5+5]
	OR	
1. a)	Explain software development life cycle. Discuss various activities during SDLC.	
b)	What are various myths about software?	[5+5]
2.	Give an overview of various system models.	[10]
	OR	
5.a)	Discuss about principal requirements engineering activities and their relationships.	
b)	Explain how a software requirements document is structured.	[5+5]
6.a)	Distinguish between coupling and cohesion? How do they effect software design?	
b)	For a Case study of your choice show the architectural and component design.	[5+5]
	OR	
7.	List and explain different kinds of architecture styles and patterns.	[10]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
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SOFTWARE ENGINEERING
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Time: 3 hours **Max. Marks: 75**

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Part- A

(25 Marks)

1. a)	Distinguish between software process and project.	[2]
b)	Discuss about changing nature of software.	[3]
c)	What is meant by system requirements?	[2]
d)	Explain about context models.	[3]
e)	Write brief notes on data design.	[2]
f)	Write about interface design evaluation.	[3]
g)	What is meant by debugging?	[2]
h)	What is meant by software measurement?	[3]
i)	What is meant by software reliability?	[2]
j)	Discuss the reactive risk strategy.	[3]

Part- B

(50 Marks)

2.	State and explain various software myths.	[10]
	OR	
3.	Explain about specialized process models.	[10]
4.	Explain clearly about software requirements document.	[10]
	OR	
5.	State and explain various aspects in requirements validation process.	[10]
6.	Discuss about mapping dataflow into software architecture.	[10]
	OR	
7.	Explain about conducting component level design.	[10]
8.	Discuss about metrics for design model and source code.	[10]
	OR	
9.	Explain clearly about metrics for software quality.	[10]
10.	Explain about formal technical reviews.	[10]
	OR	
11.	Explain about risk projection and risk management.	[10]

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