B.E.(Computer Science Engineering) Sixth Semester (C.B.S.)

Software Engineering & Project Management (SEPM)

P. Pages : 2 **NRT/KS/19/3492**

Time : Three Hours * 0 6 0 6 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.
10. Use of non programmable calculator is permitted.

1. a) Define Software Engineering? Highlight the characteristics of softwares. **8**

b) Explain the erroneous beliefs about software and the process that is used to build it. **6**

OR

2. a) Which model will work better Prototype or Spiral? Justify with proper example. **8**

b) What is an agile process? Explain the principles of agility. **6**

3. a) Why it is vital to "move on" with respect to communication principles? **6**

b) Describe Business Process Engineering. **7**

OR

4. a) Explain the term product engineering what is trade - off criteria that gives the selection of a product configuration? **6**

b) What is requirement engineering? What does win-win mean in the context of negotiation during the requirement engineering. **7**

5. a) The requirement model is a bridge between the system description and the design model. Justify the statement. **6**

b) What are the rules of thumb that should be followed when creating the analysis model? **7**

OR

6. a) Write a short note on Cohesion and coupling. **6**

b) Explain the difference between structure analysis and object oriented strategies. **7**

7. a) Explain Hierarchy of software testing with neat diagram. **8**

b) Who should perform the validation test. The software developer or the software user? Justify your answer. **5**

OR

8. a) Explain the White Box testing techniques in details. **7**

b) Describe verification and validation in brief using suitable example. **6**

9. a) Explain CMMI and six sigma models. **8**

b) Considering each of the four aspects of the cost of quality, which do you think is the most expensive and why? **5**

OR

10. a) What is SQA? How FTR is conducted for SQA? **7**

b) Write a short note on W5HH. **6**

11. a) Explain the 4P for the project management. **8**

b) An application has **6**
10 Low External I/P
12 High External O/P
12 Average Different External Queries
20 Low Internal Logical files and
15 High Legacy system Interface.
Assume value of CAF is 1.1. Compute FP.

OR

12. a) What is Risk? Explain different types of Risk. Explain How Software risk is being protected and managed. **8**

b) A software has following LOC and driver values. **6**
LOC = 40 KLOC
Personal = 1.07
Project = 0.94
Product = 1.14
Computer = 0.95
Estimate Efforts and duration for all cocomo model.

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B.E. (Computer Science Engineering) Sixth Semester (C.B.S.)

Software Engineering & Project Management

P. Pages : 2 **NIR/KW/18/3492**

Time : Three Hours * 1 2 6 2 * Max. Marks : 80

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7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.
11. Use of non programmable calculator is permitted.

1. a) Explain various software characteristics in detail. **7**

b) Define software Engineering and comment on 'Software Engineering as a Layered Technology'. **6**

OR

2. a) Write short note on **any two.** **6**

i) Spiral Model.

ii) Agile Process Model.

iii) RAD model.

b) What is software process framework? **7**

3. a) Explain system Engineering hierarchy in detail. **7**

b) Explain in detail about SRS and its contents. **6**

OR

4. a) Explain Business process Engineering in detail. **6**

b) What is requirement Engineering? Explain steps in requirement Engineering. **7**

5. a) Explain following terms : **8**

i) Abstraction. ii) Modularity

iii) Information Hiding iv) Refactoring.

b) Explain the components of analysis modelling. **6**

OR

6.	a)	Explain Behavioural model in detail.	**6**
	b)	Explain design principles in detail.	**8**
7.		Write notes on **any two.**	**14**
		i) White Box Testing.	
		ii) Black Box Testing.	
		iii) Art of debugging.	

OR

8.	a)	Explain how unit testing is performed for software.	**6**
	b)	Explain Alpha testing and Beta testing.	**4**
	c)	Explain system Testing in details.	**4**
9.	a)	Explain McCall's Quality factors.	**7**
	b)	Explain Quality function deployment.	**6**

OR

10.	a)	List and Explain the activities involved in SQA.	**7**
	b)	Explain in detail about project tracking and project scheduling.	**6**
11.	a)	What is software Risk? Explain their types.	**6**
	b)	Explain the layers of SCM process.	**7**

OR

12.		Write short note on **any two:**	**13**
		i) Software Reengineering.	
		ii) Reverse Engineering.	
		iii) RMMM Plan.	

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B.E. (Computer Science Engineering) Sixth Semester (C.B.S.)

Software Engineering & Project Management

P. Pages : 2 **NJR/KS/18/4547**

Time : Three Hours * 0 5 8 9 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
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4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Define software engineering. Explain software characteristics in detail. **6**

b) What are the practioner myths? Explain. **4**

c) Comment on "Software engineering a layered technology". **4**

OR

2. a) Explain spiral model of software development. State its advantages & disadvantages. **7**

b) Explain the phases of unified process & modelling. **7**

3. a) Describe product engineering concept in detail. **7**

b) Describe in detail the construction practice & Deployment. Principles. **6**

OR

4. a) Explain the components of computer based system. **7**

b) List & explain the different resources required to accomplish the software development. **6**

5. a) Explain the concept of system analysis in depth. **7**

b) What are the different constructs in object oriented analysis? Describe. **7**

OR

6. a) Explain data flow diagram in detail. Give the extension suggested by ward & Mellor. **6**

b) What is the concept of modularity? **4**

c) What is the meaning of Information hiding? **4**

7. a) Differentiate between black box and white box testing. Explain Boundary value Analysis technique with example. **8**

b) What is debugging? Explain the process of debugging in detail. **5**

OR

8. a) Explain & differentiate between Alpha & Beta testing. **7**

b) What is software testing? What are the objective of performing testing? What is the basic difference between verification & validation? **6**

9. a) What is software Maturity index? Why it is used? How it is computed? **7**

b) What is software quality & state the different factors available to measure quality of software. **6**

OR

10. a) State and explain McCall's quality factors (any six). **7**

b) Define Metrics, Measures Indicators, & Software quality assurance. **6**

11. a) Define Risk? Explain different types of Risk. **7**

b) Describe software project estimation techniques. **6**

OR

12. Explain **any three.** **13**

a) Forward Engineering.

b) Quality Management.

c) Restructuring Reverse engineering.

d) Project Scheduling.

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B.E. (Computer Science Engineering) Sixth Semester (C.B.S.)

Software Engineering & Project Management

P. Pages : 2 **NRJ/KW/17/4547**

Time : Three Hours * 0 1 3 0 * Max. Marks : 80

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5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.

1. a) Define software engineering. Explain software characteristics in detail. **6**

b) Explain software engineering- a layered Technology. **7**

OR

2. a) Explain common process framework for software engineering in detail. **7**

b) Explain Unified Process model in detail. **6**

3. a) What is FAST? Explain in detail. **7**

b) Explain the component of computer based system. **6**

OR

4. a) What is SRS? Explain in brief. **6**

b) Explain system Engineering Hierarchy in detail. **7**

5. a) Explain the components of analysis modelling. **8**

b) Explain the Behavioural model in detail. **6**

OR

6. a) Give and explain ten design principles in detail. **10**

b) Write short note on modularity. **4**

7. a) Explain different testing principles suggested by Davis. **4**

b) Explain Black- Box Testing techniques in detail. **10**

OR

8.	a)	Write short notes on:	**9**
		i) Validation Testing.	
		ii) System Testing.	
		iii) Integration Testing.	
	b)	What is Debugging? Explain the process of debugging in detail.	**5**
9.	a)	Explain McCall's Quality factor.	**6**
	b)	What is software Maturity Index? Why it is used? How it is computed?	**4**
	c)	What are Metrics, Measures and Indicators.	**3**

OR

10.	a)	Explain formal Technical Review (FTR) in detail.	**6**
	b)	How decision tree is used for Make-buy decision of software system?	**7**
11.	a)	Define Risk? Explain different types of Risk.	**5**
	b)	Explain in detail:	**8**
		i) Change Management.	
		ii) Project scheduling.	

OR

12.	a)	Explain in detail software Reengineering Process.	**7**
	b)	Explain RMMM plan. Also explain the concept of Risk projection.	**6**

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B.E.Sixth Semester (Computer Science & Engineering) (C.B.S.)

Software Engineering & Project Management

P. Pages : 2 **NKT/KS/17/7408**

Time : Three Hours * 0 6 8 0 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.
11. Use of non programmable calculator is permitted.

1. a) Explain the concept of software Engineering, also explain its characteristic in brief. **7**

b) Explain the software process framework. **6**

OR

2. a) Define. **6**
i) The waterfall model.

ii) Evolutionary process model.

b) Explain software Engineering as a layered technology. **7**

3. a) Write short notes on product Engineering. **7**

b) Explain system Engineering process in brief. **7**

OR

4. a) Describe the process of modeling practices used in software engineering. **7**

b) Explain Business process Engineering hierarchy. **7**

5. a) List & explain the process of Requirement analysis. **7**

b) What do you mean by data modeling? Explain. **6**

OR

6. Write short notes on **any three.** **13**

i) Design model.
ii) Design Engineering concepts.
iii) Scenario-based modeling.
iv) Object-oriented analysis.
v) Pattern-based software design.

7.	a)	Differentiate between write box testing & Black box testing.	**8**
	b)	What is cyclomatic complexity, how it is computed?	**6**

OR

8.	a)	Write short notes on Alpha testing & Beta testing.	**7**
	b)	Explain Integration testing & validation testing in brief.	**7**
9.	a)	Write short notes on software Quality & explain different factors available to measure quality of software.	**6**
	b)	What are the various quality factors used to measure software quality?	**7**

OR

10.	a)	Explain the process metric in brief.	**4**
	b)	Write notes on function point metrics. Also state its advantages & disadvantages.	**5**
	c)	What is metrics, measures & Indicators?	**4**
11.	a)	Explain the process of software Reengineering.	**6**
	b)	Write short notes on software project estimation techniques.	**7**

OR

12. Explain **any three.** **13**

i) Risk management.

ii) Quality management.

iii) Project scheduling.

iv) Change management.

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B.E. Sixth Semester (Computer Science & Engineering) (C.B.S.)

Software Engineering and Project Management

P. Pages : 2 **KNT/KW/16/7408**

Time : Three Hours * 0 1 0 6 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Use of non programmable calculator is permitted.

1. a) Explain generic view of software Engineering in detail. **5**

b) What are the practioner myths? Explain. **4**

c) What are the different areas where software can be used? **4**

OR

2. a) Explain Bohem model of software development with neat sketch along with its advantages and disadvantages. **7**

b) Explain the phases of unified process and modelling. **6**

3. a) List and explain the different resources require to accomplish the software development. **6**

b) Describe Business process engineering hierarchy using diagram. **7**

OR

4. a) List and explain in brief steps in Requirement Engineering. **7**

b) Explain following in brief System Engineering. **6**

5. a) What are the characteristics of good design? **4**

b) What is object-oriented analysis? List data modelling diamensions stated by Fitchman and Kemerer. **6**

c) Write short note on Cohesion. **4**

OR

6.	a)	What are different model in Analysis modeling? Explain.	**7**
	b)	Explain with diagram, how analysis model can be translated into design model.	**7**
7.	a)	Explain with example, how the Cyclomatic complexity is calculated.	**6**
	b)	Write in detail about software testing strategies.	**7**

OR

8.	a)	What is Black Box Testing? Explain Black Box Testing technique in detail.	**6**
	b)	Explain alpha testing and Beta testing.	**4**
	c)	State different system testing techniques.	**3**
9.	a)	What are Metrics, Measures and Indicators?	**3**
	b)	What is Software Maturity Index? Why it is used? How it is computed?	**4**
	c)	Explain MaCall's Quality Factors.	**7**

OR

10.	a)	How decision tree is used for make-buy decision of software system?	**7**
	b)	What is SQA? How FTR is conducted for SQA?	**7**
11.	a)	Write short note on.	**6**
		i) Risk Projection.	
		ii) RMMM Plan.	
	b)	Explain the layers of SCM process.	**7**

OR

12.	a)	Explain in detail software Reengineering process model.	**6**
	b)	What is Risk? Explain different types of Risk.	**7**

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B.E. (Computer Science Engineering) Sixth Semester (C.B.S.)

Software Engineering & Project Management

P. Pages : 2 **TKN/KS/16/7495**

Time : Three Hours * 0 5 6 6 * Max. Marks : 80

Notes :
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2. Solve Questions 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data wherever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.
11. Use of non programmable calculator is permitted.

1. a) Define software engineering. Explain software characteristics in detail. **6**

b) Explain software engineering - a layered technology. **7**

OR

2. a) Explain spiral model for s/w development. State its advantages and drawbacks. **7**

b) Explain Agile process model for developing the software. **6**

3. a) What is FAST? Explain in detail. **7**

b) Explain system Engineering Hierarchy in detail. **6**

OR

4. a) Explain in detail, What is SRS? Also explain its contents. **7**

b) Explain different components of computer Based system. **6**

5. a) Explain behavioural model in detail. **6**

b) Explain the elements of Analysis Model, in detail. **8**

OR

6. a) Give and explain any five design principles in detail. **5**

b) Explain following design concepts: **6**
i) Abstraction. ii) Information hiding.

c) Write a note on Modularity. **3**

7. Explain in detail white Box testing and Black box testing. **14**

OR

8. a) Explain how unit testing is performed for software. **4**

b) What do you mean by Alpha testing & Beta testing. **3**

c) What is the difference between software testing and debugging? Explain Debugging process in detail. **7**

9. a) What are Metrics, Measures and Indicators? **3**

b) Explain process metric in detail. **6**

c) What is software maturity Index? Why it is used? How it is computed? **4**

OR

10. a) List and explain the activities involved in software quality Assurance. **7**

b) What is FTR? Explain in detail. **6**

11. a) Write short note on RMMM plan. **6**

b) Explain software reengineering process in detail. **7**

OR

12. a) Write short notes on: **8**
i) Change Management. ii) Reverse Engineering.

b) How we perform project scheduling in software engineering? Explain. **5**

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Faculty of Engineering and Technology

Sixth Semester B.E. (Comp. Sci. Engg.) C.B.S. Examination

SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

Time : Three Hours] [Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Solve **SIX** questions as follows :

Solve Question No. **1 OR** Question No. **2.**

Solve Question No. **3 OR** Question No. **4.**

Solve Question No. **5 OR** Question No. **6.**

Solve Question No. **7 OR** Question No. **8.**

Solve Question No. **9 OR** Question No. **10.**

Solve Question No. **11 OR** Question No. **12.**

(3) Due credit will be given to neatness and adequate dimensions.

(4) Illustrate the answers with necessary figures/drawings wherever necessary.

1. (a) State and explain different types of Software Myths. 7

(b) Write notes on (any **two**) :

(i) RAD Model

(ii) Agile Process

(iii) Spiral Model. 6

OR

2. (a) What is Software Process Framework ? 7

(b) "Software Engineering a Layered Technology." Comment. 6

3. (a) What is requirement engineering ? Explain steps in requirement engineering. 7

(b) Explain Business Process engineering. 6

OR

4. (a) What is SRS ? Explain it in brief. 7

(b) Explain System Process engineering. 6

5. (a) Explain following terms :

(i) Abstraction

(ii) Modularity

(iii) Information Hiding

(iv) Refactoring. 8

(b) What are different elements of Analysis Modeling ? 6

OR

6. (a) Explain different design principles in detail. 10

(b) Write a note on modularity. 4

7. Write notes on (any **two**) :

(i) White Box Testing

(ii) Black Box Testing

(iii) Art of Debugging. 14

OR

8. Write notes on (any **three**) :

(i) System Testing

(ii) Integration Testing

(iii) Unit Testing

(iv) Alpha and Beta. 14

9. (a) What is project scheduling ? Explain. 7

(b) Explain MaCall's Quality factors. 6

OR

10. (a) What is SQA ? Explain in brief. 7

(b) What is Software Maturity Index ? Also explain Metrics for Testing and Maintenance. 6

(Contd.)

11. (a) Explain software configuration management. How it is useful for managing the maturity of a company to develop software according to CMM-Model ? 7

(b) Explain in detail about project tracking and project scheduling. 6

OR

12. (a) What is Quality Function Deployment (QFD) ? Explain its importance for software development processes. 7

(b) What is Software Risk ? Explain their types. 6

S-15

Faculty of Engineering & Technology

Sixth Semester B.E. (Com. Sci. Engg.)

(C.B.S.) Examination

SOFTWARE ENGINEERING & PROJECT MANAGEMENT

Time : Three Hours] [Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Solve Question **1** OR Question No. **2.**

(3) Solve Question **3** OR Question No. **4.**

(4) Solve Question **5** OR Question No. **6.**

(5) Solve Question **7** OR Question No. **8.**

(6) Solve Question **9** OR Question No. **10.**

(7) Solve Question **11** OR Question No. **12.**

(8) Due credit will be given to neatness and adequate dimensions.

(9) Assume suitable data wherever necessary.

(10) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) Explain common process framework for Software Engineering in detail. 7

(b) Explain various software characteristics in detail. 6

OR

2. (a) Explain spiral model of s/w development. State its advantages and drawbacks. 7

(b) Explain Unified Process Model for developing the software. 6

3. (a) What is FAST ? Explain in detail. 7

(b) Explain the components of computer based system. 6

OR

4. (a) Explain Business Process Engineering in detail. 7

(b) Explain in detail about SRS and its contents. 6

5. (a) Explain the components of analysis modelling. 8

(b) Explain the Behavioural model in detail. 6

OR

6. (a) Give and explain ten design principles in detail. 10

(b) Write a note on modularity. 4

7. (a) Explain basis path testing methods in detail. 8

(b) Explain control testing methods in detail. 5

OR

8. (a) Explain differentiation testing strategies in detail. 8

(b) Write a note on Validation Testing. 5

9. (a) Explain process metric in detail. 8

(b) Explain Function point metric. State its advantages and disadvantages. 6

OR

10. (a) Write a note on Quality Function deployment. 6

(b) Explain McCall's quality factors. 8

11. (a) Write a note on project scheduling. 7

(b) Write a note on change management. 6

OR

12. (a) Explain Risk mitigation, monitoring and management. 6

(b) Write a note on Reengineering. 7