May/2016

Printed Pages : 2 Roll No. .....

Questions : 7 Sub. Code : 6 8 5 7

Exam. Code : 0 9 2 4

B.Engg. (Information Technology) 6th Semester

1046

SOFTWARE ENGINEERING

Paper–IT-622/632

Time Allowed : Three Hours] **[Maximum Marks : 50**

Note : Question No. 1 is compulsory. Attempt any **two** questions from Question no. 2 to 4 and any **two** questions from Question no. 5 to 7.

1. (a) List the four major activities in project management process.

(b) Explain incremental model for system development. Differentiate it with spiral model.

(c) Explain the difference between coupling and cohesion.

(d) Differentiate between alpha and beta testing.

(e) What do you mean by Cyclomatic Complexity ?

(f) What is the difference between Software and Program ?

(g) Differentiate between Verification and Validation.

(h) What do you mean by Software Metric ?

(i) Explain why 100% testing of software cannot be done.

(j) Differentiate between reactive and proactive risk strategies. 10

Q7: Write technical notes on:

2. Explain various types of COCOMO modes. Explain about t
phase wise distribution of efforts. 1

3. What do you mean by Risk ? What is Software Risk ? Explain all types of Software Risk. 10

4. What do you mean by Quality Assurance ? Explain various factors that affect software quality. 10

5. What is the difference between structural programming and data oriented design. Explain in detail. 10

6. Draw the general architecture of CASE environment. Explain its important characteristics. 10

7. List and explain different types of testing done during the testing phase. 10

Exam. Code: 0916
Sub. Code: 6784

1018

B. Engg. (Computer Science and Engineering)-4th Semester

CS: -404: Software Engineering

Time allowed: 3 Hours Max. Marks: 50

Note: *Attempt five questions in all, including Question No. 1 (Section-A) which is compulsory and selecting atleast two questions each from Section B-C.*

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SECTION-A

(Compulsory Questions)

Q1 Answer the following:

(i)	Compare Data Abstraction and Functional Abstraction.	1
(ii)	Discuss the term software crisis and its impact.	1
(iii)	Define the term Project Velocity.	1
(iv)	What do you mean by Critical Path in scheduling of a project?	1
(v)	Differentiate between Upper CASE and Lower CASE tools.	1
(vi)	Demonstrate coupling between classes using an example.	1
(vii)	What are various types of cohesion?	1
(viii)	What is Smoke Testing?	1
(ix)	Distinguish between white box reuse and black box reuse.	1
(x)	What are Spike Solutions?	1

SECTION-B

Q2 (a) Compare Spiral and Incremental Models. For what type of projects these models are suitable and what are their respective potential problems? Which model will be suitable when initial requirements are well defined and why? 10

Q3. Develop Software Requirement Specification (SRS) as per IEEE standards for a software project of your choice. 10

Q4. (a) Demonstrate various steps involved in Structured Design using an example. 5

Q4 (b) Explain various design model elements in Object-Oriented Design using suitable examples. 5

SECTION-C

Q5 (a) Explain various size estimation techniques. Which types of techniques are available during requirement analysis phase? 5

Q5 (b) Demonstrate cost estimation for a given project using COCOMO-II model. 5

Q6 (a) Compare the test driven development process used in Extreme Programming with conventional incremental coding process. 5

Q6 (b) Explain how test strategies for object oriented software differ from those for conventional software systems? 5

Q7 (a) Discuss various class-based design metrics for object-oriented software systems. 5

Q7 (b) Convert a Sequence Diagram into corresponding Collaboration Diagram using a suitable example. Discuss their respective significance. 5

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(i) Printed Pages : 2 Roll No. May-2016

(ii) Questions : 7 Sub. Code : 6809

Exam. Code : 0916

B.Engg. (Computer Science and Engineering) 4th Semester

1046

SOFTWARE ENGINEERING

Paper : CS-404

Time Allowed : Three Hours] **[Maximum Marks : 50**

Note : Question No. 1 (Section–A) is compulsory. Attempt any **two** questions from Section B and any **two** questions from Section C.

SECTION–A

(Compulsory Question)

1. Answer the following :

(a) What do you understand by Agile methodology ? 1

(b) What are implicit requirements ? 1

(c) What is alpha testing ? 1

(d) What is a software prototype ? 1

(e) List CASE tools that can be used in design phase. 1

(f) What is cohesion ? 1

(g) What do you mean by coupling ? 1

(h) What is unit testing ? 1

(i) What is difference between testing and debugging ? 1

(j) What is cyclomatic complexity ? 1

[Turn over

SECTION–B

2. Explain the Incremental model and Prototyping model for software development. For what type of projects these are suitable respectively and discuss their pros and cons. 10

3. Compare Structured Analysis and Design approach with Object-Oriented Analysis and Design approach using suitable examples. 10

4. (a) Compare System Engineering and Software Engineering. 5

   (b) Discuss and compare various Requirement Elicitation techniques. 5

SECTION–C

5. Explain COCOMO-II model for software project estimation using suitable example. Also explain why is it better than COCOMO-I? 10

6. (a) Differentiate between verification and validation. Which one is more important? 5

   (b) Explain different approaches for conducting Integration Testing using suitable examples. 5

7. (a) Discuss various metrics for software quality. 5

   (b) Explain various UML diagrams using suitable examples. 5

(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 7 Sub. Code : 6 8 1 2

Exam. Code : 9 1 7

B.Engg. (Computer Science & Engg.) 5th Semester

1125

SOFTWARE ENGG.

Paper : CSE - 512

Time Allowed : Three Hours] **[Maximum Marks : 50**

Note :– Attempt **five** questions in all by selecting the compulsory question and at least **two** questions from each part.

(Compulsory Question)

I. (a) List any two major challenges of software engineering. 1

(b) How throwaway prototypes differ from evolutionary prototypes ? 1

(c) What do you understand by Agile methodology ? 1

(d) List two reasons why LOC is not a good metric to measure the size of software. 1

(e) Give any two examples of non-functional requirement. 1

(f) What is data coupling ? 1

(g) What is beta testing ? 1

(h) Give formulae to compute software maturity index. 1

(i) What do you mean by refactoring ? 1

(j) List any two CASE tools that can be used in analysis or design phase. 1

VI. a) How inheritance's implemented in C++? Explain.

b) Define function. How Higher-order functions are define implemented in functional programming?

'and 'Type inference' is carried out in functio

7. (a) Explain ha...

SECTION–A

II. What do you understand by a software development proces... model ? Which software development process model would yo... follow for the following projects : 3

(a) An on-line inventory management system for an automobil... industry.

(b) A spreadsheet system that has some basic features and many other desirable features that use these basic features.

(c) A flight control system with extremely high reliability. There are many potential hazards with such a system.

(d) A data entry system for office staff that has never used computers before. The user interface and user-friendliness are extremely important.

(e) A new missle tracking system. It is not known if the current hardware/software technology is mature enough to achieve the goals.

Give justification in support of your answer. 10

III. (a) The basic goal of the requirement activity is to get an SRS that has some desirable properties. What is the role of modeling in developing such an SRS ? List three major benefits that modeling provides, along with justifications, for achieving the basic goal. 5

(b) What do you mean by Project Planning ? What kinds of activities are performed under it ? Discuss in brief. 5

IV. (a) Briefly discuss COCOMO Model and its significance. A project of size 600KLOC is to be developed. Software development team has average experience on similar types of projects. The project schedule is not very tight. Calculate the effort, development time, average staff size and productivity of the project. 5

(b) Discuss any two requirement elicitation techniques and compare them. 5

SECTION–B

V. (a) What do you understand by Architectural Design ? Explain with the help of an example. 5

(b) What is cohesion ? What is the importance of cohesion in software design ? How cohesion can be classified ? Discuss in brief. 5

VI. (a) Explain various approaches to conduct integration testing with the help of suitable examples. 5

(b) Briefly discuss the metrics used for source code and their importance. 5

VII. (a) What is CASE ? Explain important building blocks for CASE. 5

(b) What is a sequence diagram ? What is its utility ? Discuss with the help of an example. 5

VI. a) How inheritance's implemented in C++? Explain.
b) Define function. How Higher-order functions are implemented in functional programming?