US05CBCA03 || SOFTWARE ENGINEERING

Question Bank || UNIT – 1

Q. 1 Multiple choice Questions (1 mark each)

1 _____ is the collection of computer programs, procedures and data.

A) Hardware B) Software

C) Network D) Engineering

2 Which phase is required to understand the problem?

A) System Design B) Coding

C) Requirement Analysis D) Testing

3 _____ is the second step of design phase.

A) Design Analysis B) System Design

C) Black box D) Detailed Design

4 The coding should follow rules of _____.

A) Structured Programming B) UML

C) Integrated Programming D) OOP

5 _____ is the simplest and most widely used software development model.

A) Spiral B) Prototype

C) Iterative enhancement D) Waterfall

6 _____ model overcomes first two limitations of Waterfall model

A) Spiral B) Prototype

C) Iterative enhancement D) Waterfall

7 _____ model provides better risk management and cost of each phase.

A) Spiral B) Prototype

C) Iterative enhancement D) Waterfall

8 Efficiency and Reliability are measured on which dimension of Quality control.

A) Product Transition B) Product Usability

C) Product Operation D) Product Revision

9 _____ requires major efforts.

A) Testing B) Maintenance

C) Coding D) Design

(Ans:- 1-B; 2-C; 3-D; 4-A; 5-D; 6-B; 7-A; 8-C; 9-A)

Q. 2 Short Questions (2 marks each)

1 Define: Software, Software Engineering, Software Process and Software Project.

2 List down characteristics of software process.

3 Write a short note on requirement analysis phase.

4 Write a short note on maintenance phase.

5 Explain error distribution.

6 What are the limitations of Waterfall model?

7 Explain advantages of spiral model.

8 Write a short note on Product transition to maintain quality.

Q. 3 Descriptive Questions

1	What is Software engineering? Explain characteristics of software process.	**5**
2	Explain design, coding and testing phase of software development.	**6**
3	Explain prototype model.	**4**
4	Explain iterative enhancement model.	**4**
5	Which factors are effects on quality of software?	**6**
6	Explain error and effort distribution.	**6**

Q. 4 Long Question (10 marks each)

1 Explain waterfall model.

2 Explain phases of software development.

Question Bank || UNIT – 2

Q. 1 Multiple choice Questions (1 mark each)

1 An SRS establishes the basis for agreement between the _____ and the _____.

A) User & Product B) Client & Supplier

C) Product & Quality D) Developers & Project

2 An SRS provides a reference for _____ of the final product.

A) Validation B) Xerox copy

C) Verification D) Quality

3 A high quality SRS reduces the development _____.

A) Time B) Customer requirements

C) Cost D) Quality

4 _____ activity is used to understand the needs, goals and constraints.

A) Testing B) Requirement Specification

C) Design D) Problem Analysis

5 _____ characteristic of SRS means the entire requirement denotes one interpretation.

A) Complete B) Reliability

C) Unambiguous D) Traceable

6 The components of SRS are:

A) Function Requirement, B) Coding, Testing

Performance requirement

C) Effective, Complete D) SCM, SQAP

7 Partitioning, abstraction and projection are used for _____.

A) Data Analysis B) Structuring Information

C) SDLC D) DFD

8 _____ is the formal language used to specify the requirements.

A) English B) UDF

C) Structured English D) Expressions

9 Bang metric is used to quantify the _____of the project

A) Size B) Time

C) Functions D) Needs

10 The effort can be calculate using _____ formula in single variable model.

A) Effort = a * sizeb B) Effort = a + sizeb

C) Effort = a * size / b D) Effort = a / sizeb

11 COCOMO stands for:

A) Construction Cost Model B) Constructive Cost Model

C) Constructive Code Model D) Calculated Cost Model

12 The medium size projects are also known as _____ projects

A) Organic B) Embedded

C) Semidetached D) Run away

13 The form which can be filled up daily or weekly to maintain monitoring and plan activity are known as _____.

A) UDF B) Time sheets

C) Cost Schedule Milestone graph D) Reviews

14 The Gantt chart is used for _____ method to display activities.

A) Earn value method B) Review

C) UDF D) SRS

15 KDLOC means _____

A) Kilogram Developed Line of Code B) Kilogram Delivered Local Code

C) Thousands Delivered Local Code D) Thousands Delivered Line of Code

16 (SQAP) means _____

A) Software Quality Assurance Plan B) System Quality Appearance Plans

C) Software Quick Activity Plans D) System Quantity Assurance Process

17 _____ is the method to identify the Risk

A) Risk Identification B) Risk Analysis

C) Risk Assessment D) Risk Control

(Ans: 1-B; 2-A; 3-C; 4-D; 5-C; 6-A; 7-B; 8-C; 9-A; 10-A; 11-B; 12-C; 13-B ; 14-A ; 15-D; 16-A; 17-C)

Q. 2 Short Questions (2 marks each)

1 Justify the following.
"The objective of SRS is to specify what is needed from the system, not how the system will provide it."

2 Justify the following.
"Now a day a more importance is given to SRS instead of design and coding."

3 Justify the following..
"A high quality SRS is prerequisite to high quality software"

4 Justify the following.
"A high quality SRS reduces development cost"

5 Explain Partitioning.

6 Explain Projections.

7 Explain Design constraints as a component of SRS.

8 What is Structured English?

9 What do you mean by "Automated Cross Referencing".

10 List down the activities performed during project planning.

11 Explain software size estimation methods in short.

12 List down at least 8 variables of COCOMO model.

13 Write a short note on Time sheets.

14 Write a short note on Cost schedule - Milestone Graph.

15 Write a short note on Earned Value method.

16 Explain V & V technique for SQAP.

17 Explain Risk management.

Q. 3 Descriptive Questions

1	What is SRS? Explain needs of SRS.	**4**
2	What you mean by SRS? Explain Components of SRS.	**6**
3	Explain general characteristics of SRS.	**4**
4	Explain Requirement specification in SRS. (or Structure of SRS).	**7**
5	What is specification language?	**4**
6	Explain validation process of SRS.	**6**
7	What is the importance of project monitoring plans? List the various methods for monitoring a project. Write in brief about any one of them.	**6**
8	Explain Single variable model for cost estimation.	**6**
9	Explain SQAP.	**5**

Q. 4 Long Question (10 marks each)

1 What is SRS? Explain characteristics, needs and Components of SRS.

2 Explain COCOMO Model.

Question Bank || UNIT – 3

Q. 1 Multiple choice Questions (1 mark each)

1 PDL stands for

A) Process Define Language
B) Prefer Define Language
C) Procedure Design Language
D) Process Design Language

2 In system design, we do following:

A) Hardware design after software design
B) Software design after hardware design
C) Parallel, Hardware and Software design
D) No hardware design needed.

3 Design phase includes …

A) Data, architectural and procedural design only
B) Architectural, procedural and interface design only
C) Data, architectural and interface design only
D) Data, architectural, interface, procedural design

4 Which of the following is a tool in design phase?

A) Abstraction
B) Refinement
C) Information Hiding
D) All of them

5 Which one is the key term used in design of a system?

A) Module
B) Data
C) Process
D) None

6 Which of the following is NOT a component of Object oriented software engineering?

A) Process
B) Method
C) Architecture
D) None

7 Which is not the level of Cohesion?

A) Logical
B) Physical
C) Sequential
D) Coincidental

8 Structured design methodology tries to reduce _____

A) Cost
B) Time
C) Cohesion
D) Coupling

9 Number of subordinates associated with given module is known as _____

A) Fan-out
B) Fan-in
C) Dependency
D) Module

10 Which is not factor for design specification?

A) Problem Specification B) Design Decision

C) Abstraction D) Module Specification

11 _____ technique is used to verification of system design.

A) Interview B) Coupling

C) Functional Requirement D) Automated Cross checking

12 In functional abstraction the module considered as _____ for detail design.

A) White box B) Black box

C) Compiled box D) None

13 Most common method for designing algorithm is _____

A) Object refinement B) Procedural refinement

C) Step wise refinement D) All of them

14 _____ is verification technique for detail design.

A) Design walkthrough B) Critical design

C) Consistency checkers D) All of them

(Ans: 1-D; 2-C; 3-D; 4-D; 5-A; 6-C; 7-B; 8-D; 9-A; 10-C; 11-D; 12-B; 13-C; 14-D)

Q. 2 Short Questions (2 marks each)

1 Define: Coupling and Cohesion.

2 Define: Module and Modular System.

3 Differentiate between System design and Detailed design

4 Differentiate between Coupling and Cohesion

5 Differentiate between Top-down and Bottom-up approaches

6 Differentiate between Functional and Object-oriented approaches

7 Explain in brief Design walkthrough.

8 List the levels of Cohesion.

9 List the names of verification techniques for System and Detailed design.

Q. 3 Descriptive Questions

1	Discuss the design objectives in detail with proper illustrations.	**6**
2	Discuss the basic principles of design in detail.	**8**
3	Write a short note on Coupling.	**4**
4	Write a short note on Cohesion.	**8**
5	Write a brief note on Structured design.	**7**
6	What is design specification? Explain factors of it.	**5**
7	Explain verification techniques for system design.	**4**

8	Write a short note on PDL.	**4**
9	Write a short note on Logic/Algorithm design.	**5**
10	What is module specification?	**4**
11	Explain functional module specification.	**4**
12	Explain data abstraction module specification.	**4**
13	Explain the verification techniques for Detailed Design.	**6**

Q. 4 Long Question (10 marks each)

1 What is system design? Explain how coupling and cohesion used.

2 What is detail design? Explain module specification techniques in detail.

Question Bank || UNIT – 4

Q. 1 Multiple choice Questions (1 mark each)

1 The goal of coding should not be to reduce the _____ cost, but the goal should be to reduce cost of _____.

A coding, designing B implementation, later phases

C implementation, designing D testing, maintenance

2 In structured design methodology the hierarchy of modules is represented by the _____.

A flow chart B PERT chart

C Gant chart D structure chart

3 Structured programming is often called _____ programming

A. goto-less B. object oriented

C. procedural D. None of these

4 In static structure of a program the text of the program is in _____ organization.

A. structured B. linear

C. static D. None of these

5 The information hiding principle in modern programming languages by _____.

A. data-hiding B. encapsulation

C. data-abstraction D. inheritance

6 The single-entry, single-exit constructs are also called _____.

A. control constructs B. iteration constructs

C. selection constructs D. None of these

7 In programming style, nesting means _____.

A. switch B. if-then-else

C. nested function D. nested for loop

8 When _____ type of variables is changed then some side effects are occurs.

A. static B. dynamic

C. global D. None of these

9 Comments for a module are often called _____ for the module.

A. prologue B. message

C. information D. None of these

10 The program verification methods fall in which categories?

A. Static B. Dynamic

C. Static and Dynamic D. Structured

11 Which static method is used for verify the programs?

A. Review B. Automated cross checking

C. Code reading D. None of these

12 Code reading is the reverse of which phase?

A. Detailed design B. Requirement

C. Testing D. Design

13 Errors refer to the difference between _____ output of software and the _____ output.

A. actual, obtained B. actual, correct

C. correct, ideal D. None of these

14 A failure is produced only when there is a _____ in the system.

A. error B. bug

C. fault D. problem

15 The structural approach is sometimes called _____.

A. glass-box testing B. Graph testing

C. regression testing D. Black-box testing

(Ans: 1-B; 2-D; 3-A; 4-B; 5-C; 6-A; 7-B; 8-C; 9-A; 10-C; 11-C; 12-D; 13-B; 14-C; 15-A)

Q. 2 Short Questions (2 marks each)

1 Write the goal of coding.

2 What do you mean by structured programming?

3 What do you mean by information hiding?

4 Which are the control constructs used in structured programming?

5 List at least 6 general rules of programming style.

6 How the internal documentation helps?

7 What do you mean by code reading?

8 Define Error, fault, failure (any two).

9	Write at least 2 differences between functional and structural testing.	
10	Draw the diagram of levels of testing.	

Q. 3 Descriptive Questions

1	Explain the Top-Down and Bottom-Up approach in coding.	**5**
2	Explain the structured programming used in coding.	**5**
3	Explain the concept of information hiding in structured programming.	**4**
4	List all the rules to write the code in coding phase and explain any three of them (Programming Style).	**7**
5	What do you mean by the internal coding in documentation? Explain it (internal documentation).	**4**
6	What is verification process in coding phase and explain Code reading method.	**4**
7	Define the following terms: Error, Fault and Failure.	**3**
8	List out the testing fundamentals, and explain any one (or all) of them.	
9	Explain the Top-Down and Bottom-Up approach in testing phase.	**4**
10	Differentiate between Functional testing and Structural testing.	**4**
11	Explain the levels of testing.	**5**

Q. 4 Long Question (10 marks each)

1	Explain coding approach and programming style.
2	What is testing? Explain levels of testing using diagram.