Software Engineering Question BANK

computer science (KPRIT AIML)

GIT HUB : shyam-sudheer1602 github

KOMMURI PRATAP REDDY ENGNEERING COLLEGE

Academic year: 2024-25 **Subject :** Software Engineering

Course : B.Tech. **Branch :** CSE(AIML) **Year:** II **Semester :**1

QUESTION BANK

PART – A (Short Answer Questions)

S. No	Questions	Blooms Taxonomy Level	Course Outcome
	UNIT – I		
1	**Explain** is legacy software?	Knowledge	
2	**Demonstrate** all the applications of software?	Knowledge	
3	**List** the types of software myths?	Knowledge	
4	**Discuss** the architecture of layered technology?	Understand	
5	**List** all the umbrella activities in process framework?	Understand	
6	**Explain** is process pattern?	Knowledge	
7	**List** the types of software models?	Understand	
8	**List** the types other software process models?	Understand	
9	**Explain** software component? explain its uses	Understand	
10	**Explain** process assessment?	Knowledge	
11	**List** the models in CMMI?	Knowledge	
12	**Explain** the levels in continuous model in CMMI?	Understand	
13	**Compare** between perspective and iterative process models?	Understand	
14	**Explain** staged model in CMMI?	Knowledge	
15	**Write the** other name of waterfall model and who invented waterfall model?	Understand	
16	**Explain** Boehm model?	Understand	
17	**List** the phases in unified process model??	Understand	
18	**List** the types of patterns?	Knowledge	
19	**Explain** PSP and TSP?	Knowledge	
20	**Explain** high speed adaptation model?	Understand	
	UNIT - II		
1	**Explain** the kinds of system requirements?	Knowledge	
2	**Explain** functional requirement?	Knowledge	
3	**Explain** nonfunctional requirement?	Understand	
4	**Explain** domain requirements?	Understand	
5	**List** kinds of nonfunctional requirements?	Knowledge	
6	**Explain** example of functional requirement?	Understand	
7	**Explain** user requirements in detail?	Understand	
8	**Explain** system requirement in detail?	Understand	
9	**Explain** interface and list out how many types of there and what are they?	Knowledge	
10	**Explain** the term stake holder?	Knowledge	
11	**Explain** requirements gathering??	Knowledge	
12	**Explain** requirement validation?	Understand	
13	**Explain** requirement review?	Understand	
14	**Explain** data dictionary?	Understand	
15	**Discuss** data flow model?	Knowledge	
16	**Explain** state machine model of a microwave oven?	Knowledge	
17	**List** kinds of behavioral and object models?	Knowledge	
18	**Design** class hierarchy for library by using in heritance model?	Knowledge	
19	**Describe** ethnography?	Understand	
20	**Explain** viewpoints and types of viewpoints?	Understand	
	UNIT - III		
1	**Explain** why design is important in design engineering?	Knowledge	
2	**Discuss** analysis and design model?	Understand	
3	**Describe** quality attributes and its guidelines?	Understand	
4	**List** the design concepts?	Knowledge	
5	**Justify** the importance of refactoring?	Understand	
6	**Discuss** on low coupling?	Understand	
7	**Define** software architecture with its importance?	Understand	
8	**Explain** taxonomy of architectural styles?	Knowledge	
9	**Write** short notes on architecture patterns?	Knowledge	
10	**Compare** function oriented and object oriented design?	Understand	
11	**Define top**-down and bottom-up design model?	Knowledge	

12	**Write** short notes on coupling?	Knowledge	
13	**List** out the steps for conducting component level design?	Knowledge	
14	**Write** short notes on cohesion?	Knowledge	
15	**Design** the class based components?	Understand	
16	**List** out the golden rules for interface design?	Understand	
17	**Write** short notes on interface design steps?	Knowledge	
18	**Describe** design evaluation?	Knowledge	
19	**List** out all the design issues?	Understand	
20	**Explain** process in user interface design?	Understand	
	UNIT IV		
1	**Compare** verification and validation?	Knowledge	
2	**Write** short notes on unit testing?	Knowledge	
3	**Describe** smoke testing?	Knowledge	
4	**List** out the steps for bottom-up integration?	Knowledge	
5	**List** out the steps for top-down integration?	Understand	
6	**Write** short note on integration testing?	Understand	
7	**Compare** Quality assurance vs. Quality Control?	Knowledge	
8	**Define** CASE tools?	Knowledge	
9	**Write** short notes on validation testing?	Knowledge	
10	**Explain** art of debugging?	Understand	
11	**Describe** regression testing?	Knowledge	
12	**List** out the steps for integration step documentation?	Knowledge	
13	**Describe** performance testing?	Knowledge	
14	**Write** short notes on glass box testing?	Knowledge	
15	**Explain** behavioral testing?	Understand	
16	**List** the quality factors of McCall's?	Understand	
17	**List** the quality factors of ISO 9126?	Knowledge	
18	**Define** the following terms measures, metrics, and indicators?	Understand	
19	**Write** short notes on product metric land scrape?	Understand	
20	**List** out the metrics for analysis model?	Understand	
	UNIT - V		
1	**Define** reactive and proactive risk strategies?	Knowledge	
2	**List** out the generic subcategories of predictable risks?	Understand	
3	**Define** risk components?	Understand	
4	**List** out the conditions for risk refinement?	Knowledge	
5	**Write about** quality concepts?	Understand	
6	**Write** short notes on formal technical reviews?	Understand	
7	**List** out review guidelines??	Understand	
8	**Describe** six sigma for software?	Knowledge	
9	**Write** about the classification of case tool?	Knowledge	
10	**Write** a short notes on ISO 9000 quality standards?	Understand	
11	**Write** the formulae for measures of reliability and availability?	Knowledge	
12	**Explain** about software cost estimation?	Knowledge	
13	**Write** short note on the various estimation techniques?	Knowledge	
14	**Define** software risks and what are the types of software risks?	Knowledge	
15	**Describe** risk components and drivers?	Understand	
16	**Write** the purpose of timeline chart?	Understand	
17	**Expand** RMMM in RMMM plan?	Knowledge	
18	**Define** software reliability?	Understand	
19	**Define** quality and quality control in quality management?	Understand	
20	**Write** short notes on risk identification?	Understand	

PART – B (Long Answer Questions)

S. No	Questions	Blooms Taxonomy Level	Course Outcome
	UNIT – I		
1	**Explain** the evolving role of software?	Knowledge	
2	**Define** software and explain the various characteristics of software?	Knowledge	
3	**Describe** "Software myth"? Discuss on various types of software myths and the true aspects of these myths?	Knowledge	
4	**Explain** software Engineering? Explain the software engineering layers?	Understand	
5	**Explain** in detail the capability Maturity Model Integration (CMMI)?	Understand	
6	**Describe** with the help of the diagram discuss in detail waterfall model. Give certain reasons for its failure?	Knowledge	

7	**Explain** briefly on (a) the incremental model (b) The RAD Model?	Understand	
8	**Explain** the Spiral model in detail?	Understand	
9	**Describe** With the help of the diagram explain the concurrent development model?	Understand	
10	**Explain** unified process? Elaborate on the unified process work products?	Knowledge	
11	**Explain** specialized process models?	Knowledge	
12	**Explain** different software applications?	Knowledge	
13	**Explain** the paradigms do you think would be most effective? Why?	Understand	
14	**Explain** product and process are related?	Understand	
15	**Explain** personal and team process models?	Understand	
16	**Explain** process frame work activities?	Knowledge	
17	**Explain** the purpose of process assessment?	Knowledge	
18	**Explain** changing nature of software in detail?	Knowledge	
19	**Explain** and contrast perspective process models and iterative process models?	Understand	
20	**Explain** about the evolutionary process models?	Understand	
	UNIT – II		
1	**Write** short notes on user requirements. What are requirements?	Knowledge	
2	**Compare** functional requirements with nonfunctional requirements?	Knowledge	
3	**Discuss** system requirements in a detail manner?	Understand	
4	**Explain** requirement engineering process?	Understand	
5	**Discuss** briefly how requirement validation is done?	Knowledge	
6	**Discuss** your knowledge of how an ATM is used; develop a set of use-cases that could serve as a basis for understanding the requirements for an ATM system?	Understand	
7	**Describe** four types of non-functional requirements that may be placed on a system. Give examples of each of these types of requirement?	Understand	
8	**Explain** how requirements are managed in software project management?	Understand	
9	**Explain** context models?	Knowledge	
10	**Explain** Behavioral models?	Knowledge	
11	**Explain** Data models?	Knowledge	
12	**Explain** Object models?	Understand	
13	**Explain** in which circumstances would you recommend using structured methods for system development?	Understand	
14	**Explain** SRS document and explain along with its contents?	Understand	
15	**Explain** interface specification in detail?	Knowledge	
16	**Discuss** how requirements are felicitated and validated in software project?	Knowledge	
17	**Discuss** how feasibility studies are important in requirement engineering process?	Knowledge	
18	**Demonstrate** class hierarchy for library by using interface specification?	Understand	
19	**Explain** inheritance model?	Understand	
20	**Explain** state machine model with a suitable example?	Understand	
1	**Explain** a two level process? Why should system design be finished before the detailed design, rather starting the detailed design after the requirements specification? Explain with the help of a suitable example	Knowledge	
2	**Discuss** briefly the following fundamental concepts of software design: i) Abstraction ii) Modularity iii) Information hiding	Understand	
3	**Explain** briefly the following: i) Coupling between the modules, ii) The internal Cohesion of a module	Understand	
4	**Discuss** the fundamental principles of structured design. Write notes on transform analysis?	Knowledge	
5	**Explain** software architecture in a detail manner?	Understand	
6	**Explain** software design? Explain data flow oriented design?	Understand	
7	**Explain** the goals of the user interface design?	Understand	
8	**Discuss** briefly about the golden rules for the user interface design?	Knowledge	
9	**Discuss** interface design steps in a brief manner?	Knowledge	
10	**Explain** how the design is evaluated?	Understand	

11	**Explain** design processing along with its quality?	Knowledge	
12	**Explain** the design concepts in software engineering?	Understand	
13	**Explain** pattern based software design in a detail manner?	Understand	
14	**Elaborate** model for the design?	Understand	
15	**Discuss** architectural styles and patterns?	Knowledge	
16	**Explain** with a neat diagram of architectural design?	Knowledge	
17	**Elaborate** modeling component level design?	Knowledge	
18	**Describe** mapping data flow into software architecture?	Understand	
19	**Explain** the guide lines of component level design?	Understand	
20	**Describe** the way of conducting a component level design?	Understand	
	UNIT- IV		
1	**Explain** about the importance of test strategies for conventional software?	Knowledge	
2	**Discuss** black box testing in a detailed view?	Apply	
3	**Compare** black box testing with white box testing?	Apply	
4	**Compare** validation testing and system testing?	Knowledge	
5	**Discuss** software quality factors? Discuss their relative importance?	Understand	
6	**Discuss** an overview of quality metrics?	Understand	
7	**Explain** should we perform the Validation test – the software developer or the software user? Justify your answer?	Apply	
8	**Explain** about Product metrics?	Knowledge	
9	**Explain** about Metrics for maintenance?	Knowledge	
10	**Explain** in detail about Software Measurement?	Understand	
11	**Explain** about Metrics for software quality?	Knowledge	
12	**Explain** strategic approach to software testing	Understand	
13	**Describe** test strategies for conventional software	Understand	
14	**Describe** validation testing	Understand	
15	**Write** a long notes on system testing	Knowledge	
16	**Demonstrate** art of debugging	Knowledge	
17	**Discuss** a framework for product metrics	Knowledge	
18	**Demonstrate** metrics for analysis model	Understand	
19	**List** the metrics for the design model	Understand	
20	**Describe** metrics for source code and for testing	Understand	
	UNIT - V		
1	**Explain** about software risks?	Knowledge	
2	**Elaborate** the concepts of Risk management Reactive vs Proactive Risk strategies?	Understand	
3	**Explain** about RMMM Plan?	Understand	
4	**Explain** about Quality concepts?	Knowledge	
5	**Explain** software quality assurance?	Understand	
6	**Explain** about formal technical reviews?	Understand	
7	**Explain** in detail ISO 9000 quality standards?	Understand	
8	**Discuss** risk refinement?	Knowledge	
9	**Compare** reactive with proactive risk strategies?	Knowledge	
10	**Discuss** software reliability?	Understand	
11	**Briefly** explain about formal approaches to SQA?	Knowledge	
12	**Demonstrate** statistical SQA?	Understand	
13	**Define** software reliability along with its terms?	Understand	
14	**Explain** risk projection in detail?	Understand	
15	**Explain** seven principals of risk management?	Knowledge	
16	**Explain** software reviews in brief?	Knowledge	
17	**Explain** six sigma for software engineering?	Knowledge	
18	**Explain** quality management with their terms?	Understand	
19	**Demonstrate** risk identification?	Understand	
20	**Describe** developing a risk table?	Understand	

PART – C (Problem Solving and Critical Thinking Questions)

S. No	Questions	Blooms Taxonomy Level	Course Outcome
	UNIT – I		
1	**Describe** the law of conservation of familiarity in your own words?	Knowledge	
2	**Suggest** a few ways to build software to stop deterioration due to change?	Knowledge	
3	**Try** to develop a task set for the communication activity?	Apply	
4	**What** is the purpose of process assessment? Why has SPICE been developed as a standard for process assessment?	Knowledge	
5	**Discuss** the meaning of "cross-cutting concerns" in your words?	Knowledge	
	UNIT – II		
1	**Identify** and briefly describe four types of requirements that may be defined for computer based system?	Knowledge	
2	**List** out plausible user requirements for the following functions a) Cash dispensing function in a bank ATM? b) Spelling check and correcting function in a word processor?	Knowledge	
3	**Suggest** how an engineer responsible for drawing up a system requirements specification might keep track of the relationship between functional and non- functional requirements?	Knowledge	
4	**Suggest** who might be stakeholders in a university student record system. Explain why it is almost inevitable that the requirements of different stakeholders will conflict in some way?	Knowledge	
5	**Explain** who should be involved in requirements review? draw a process model showing how a requirements review might be organized?	Apply	
	UNIT – III		
1	**State** how do we assess quality of a software design?	Knowledge	
2	**Suggest** a design pattern that you encounter in a category of everyday things?	Apply	
3	**Provide** examples of three data abstractions and the procedural abstractions that can be used to manipulate them?	Apply	
4	**Explain** the difference between a data base that services one or more conventional business applications and data warehouse?	Knowledge	
5	**Demonstrate** the architecture of a house or building as a metaphor, draw comparison with software architecture. How are the disciplines of classical architecture and software architecture similar? How do they differ?	Apply	
	UNIT – IV		
1	**Provide** a few examples that illustrate why response time variability can be an issue?	Knowledge	
2	**Develop** two additional design principles "place the user in control"?	Apply	
3	**Develop** two additional design principles "make the interface consistent"?	Apply	
4	**Develop** a complete test strategy for the safe home system. Document it in a test specification.	Apply	
5	**Provide** examples for unit testing?	Apply	
	UNIT – V		
1	**Quality** and reliability are related concepts but are fundamentally different in number of ways. Discuss them?	Apply	
2	**You** have been given the responsibility for improving quality of software across your organization. What is the first thing that you should do? What's next?	Apply	
3	**Some** people argue that an FTR should assess programming style as well as correctness is this a good idea? Why?	Apply	
4	**Is** it possible to assess the quality of software if the customer keeps changing what it is supposed to do?	Apply	
5	**Create** a risk table for the project that if you are the project manager for a major software company. you have been asked to lead a team that's developing "next generation "word- processing software?	Apply	