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- e. What is functional decomposition in software system design?
- (A) A design method that breaks a system into smaller units
 - (B) A requirements analysis method that breaks the system into cohesive and related units
 - (C) A design methodology that uses modular prototypes to build the complete system
 - (D) The ability to upgrade the features of a particular module of a system with minimal impact on other modules
- f. Which statement about the preliminary design stage of a software development project is true?
- (A) The preliminary design is an internal document used only by programmers.
 - (B) The preliminary design is the result of mapping product requirements into software and hardware functions.
 - (C) The preliminary design of the product comes from the initial meetings between the customer and the programmer.
 - (D) The developers produce the preliminary design by defining the software structure in enough detail to permit coding.
- g. A data dictionary was created during the requirements analysis phase of a software engineering project. What information does it contain?
- (A) Content description
 - (B) Data type
 - (C) Restrictions
 - (D) All of the above
- h. The software process
- (A) is the general set of activities undertaken to develop a software product.
 - (B) includes project management activities such as planning and scheduling.
 - (C) uses various process models to engineer software.
 - (D) includes configuration management activities as part of it.
- i. Which of the following is / are true with regard to the spiral model of software development?
- (A) It is an evolutionary model that includes an explicit risk analysis phase.
 - (B) Spiral model is an incremental software development model.
 - (C) It is a universal model that may incorporate other models such as the linear sequential model or the prototyping model during different epochs.
 - (D) It is applicable for projects with clear and stable requirements.
- j. What is / are the correct statement(s) with respect to software quality?
- (A) The Capability Maturity Model (CMM) is a scheme to classify a software development organization according to its capability.
 - (B) The quality management process starts after the design stage of the software development process.
 - (C) A quality plan sets out the desired product qualities and how they are assessed.
 - (D) Each deliverable of the software development process is an input to the quality management process.

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

- Q.2** a. Explain the waterfall model in detail. What are the advantages and disadvantages of this model? (8)
- b. Discuss typical software risks. What are the risk management activities? Is it possible to prioritize risk? (8)
- Q.3** a. Differentiate between Functional and non functional requirements. (8)
- b. What do you mean by requirement engineering? Explain its activities in details? (4)
- c. Draw the use case diagram of Library Management System. (4)
- Q.4** a. What are the stages of software specification and its interfaces with the design process? (8)
- b. Explain the RAD technique in detail. (4)
- c. What do you mean by prototype of software? What are the benefits of making a prototype of software? (4)
- Q.5** a. With the help of a diagram, explain an object model of an invoice processing system. (8)
- b. Explain the use of different Client-Server architecture. (4)
- c. What do you mean by Peer-to-Peer architecture? Explain it with the help of example. (4)
- Q.6** a. Under what circumstances might you develop a design where objects execute concurrently? (8)
- b. Explain the problems with software reuse. (4)
- c. Discuss the Component Based Software Engineering. (4)
- Q.7** a. What are the basic principles of User Interface design? (8)
- b. Explain the various characteristics of dependable processes. (8)
- Q.8** a. Discuss the differences between verification and validation, and explain why validation is a particularly difficult process. (6)
- b. Describe two metrics that have been used to measure programmer productivity. (6)
- c. Differentiate between the structural testing and Functional testing. (4)

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- Q.9** a. What are the key areas covered by the ISO 9001 model for quality assurance? (8)
- b. Under what circumstances would you recommend the use of the staged representation of the CMMI? (4)
- c. Discuss the concept of Configuration Management Planning. (4)