CORE-XIII SYSTEM ANALYSIS AND DESIGN

LONG QUESTIONS:

1. What is the System Development Life Cycle (SDLC), and what are its phases? Discuss the importance of each phase in the context of system analysis and design.
2. Explain the role of a systems analyst in the SDLC. How does their expertise contribute to the success of a project?
3. What are the key differences between waterfall and agile methodologies in system development? Discuss the advantages and disadvantages of each approach.
4. Describe the process of requirements gathering in system analysis. What techniques and tools can be used to elicit and document requirements effectively?
5. Examine the concept of feasibility analysis in system development. What factors should be considered in evaluating the feasibility of a project?
6. Discuss the importance of creating use cases and use case diagrams in modeling system requirements. Provide an example to illustrate their application.
7. What is the purpose of data flow diagrams (DFDs) in system design? How can they be used to model data processes and flows within a system?
8. Explain the principles of object-oriented analysis (OOA) and design (OOD). How does OOA/OOD differ from traditional structured analysis and design?
9. Describe the role of entity-relationship diagrams (ERDs) in modeling data relationships within a system. Provide an example to illustrate the use of ERDs.
10. Discuss the process of creating a system prototype. How can prototyping be used to refine and validate system requirements?
11. Examine the principles of user interface (UI) design. What factors should be considered when designing a user-friendly interface for a system?
12. What is normalization in the context of database design? How does it help improve data integrity and efficiency in a database system?
13. Describe the importance of system testing and validation in the SDLC. What types of testing should be conducted to ensure the reliability of a system?
14. Discuss the challenges and strategies of managing system change and configuration control during development and maintenance.
15. Explain the concept of system implementation and deployment. What steps should be taken to ensure a smooth transition from development to production?
16. What is system maintenance, and why is it a critical phase in the SDLC? How can preventive and corrective maintenance activities be planned and executed effectively?
17. Describe the concept of software quality assurance (SQA) in system development. How does SQA contribute to the delivery of a high-quality system?
18. Discuss the role of documentation in system analysis and design. What types of documentation are essential for various stakeholders?
19. Examine the principles of risk management in system development. How can potential risks be identified, assessed, and mitigated throughout the SDLC?

20. What is the significance of project management in system development? How can project managers ensure that projects are completed on time and within budget?
21. Discuss the challenges and strategies for ensuring security and data privacy in system design and development.
22. Explain the concept of scalability in system architecture. How can systems be designed to accommodate future growth and changing requirements?
23. Describe the concept of user acceptance testing (UAT) and its role in validating that a system meets user expectations.
24. What is the role of user training in system implementation? How can effective training programs be designed and delivered to users?
25. Discuss the importance of post-implementation evaluation and system performance monitoring. How can systems be continuously improved based on user feedback and metrics?
26. Examine the principles of system modeling using Unified Modeling Language (UML). How can UML diagrams help visualize and communicate system designs?
27. What is the role of data dictionaries and data modeling tools in system design and documentation?
28. Describe the concept of business process reengineering (BPR) and its relevance in system analysis and design.
29. Explain the concept of system architecture and the importance of selecting an appropriate architecture for a given project.
30. Discuss the ethical considerations and responsibilities of systems analysts in ensuring the ethical and responsible use of technology in system development.

SHORT QUESTIONS:

1. What is the primary goal of system analysis?
2. Define the System Development Life Cycle (SDLC).
3. What is the role of a systems analyst in the SDLC process?
4. Explain the concept of requirements gathering in system analysis.
5. How does feasibility analysis impact project decision-making?
6. What are use cases, and why are they important in system analysis?
7. What do data flow diagrams (DFDs) represent in system modeling?
8. What is object-oriented analysis (OOA) and how does it differ from structured analysis?
9. Define entity-relationship diagrams (ERDs) in the context of database design.
10. How can prototyping be useful in system design and validation?
11. What is the purpose of user interface (UI) design in system development?
12. Why is system testing essential in the SDLC?
13. Describe the concept of system implementation and deployment.
14. What is system maintenance, and why is it necessary?
15. Explain the role of documentation in system analysis and design.
16. What is risk management, and how does it apply to system development?

How does project management contribute to successful system development