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| BRANCH | CSE-AIDS |
| SESSION | 2023-24 |
| SEMESTER | IV |

# SAGAR INSTITUTE OF SCIENCE & TECHNOLOGY

## DEPARTMENT OF CSE-ARTIFICIAL INTELLIGENCE & DATA SCIENCE

## QUESTION BANK

**SUBJECT/CODE: SEAM/ AD-403**

| S.No | Question | Bloom's Taxonomy Level | Course Outcome |
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| | **UNIT 1** | | |
| 1. | Differentiate between agile methodology and waterfall model of software development | 2(Understand) | CO1 |
| 2. | What is the principal aim of the software engineering discipline? What does the discipline of software engineering discuss? | 2(Understand) | CO1 |
| 3. | Do you agree with the following statement—The focus of exploratory programming is error correction while the software engineering principles emphasize error prevention"? Give the reasoning behind your answer. | 1(Remember) | CO1 |
| 4. | What do you understand by the principles of abstraction and decomposition? Why are these two principles considered important in software engineering? Explain the problems that these two principles target to solve? Support your answer using suitable examples. | 1(Remember) | CO1 |
| 5. | What do you understand by the term—structured programming? How do modern programming languages such as PASCAL and C facilitate writing structured programs? What are the advantages of writing structured programs vis-à-vis unstructured programs? | 2(Understand)) | CO1 |
| 6. | What does the control flow graph (CFG) of a program represent? Draw the CFG of the following program: | 2(Understand) | CO1 |
| 7. | Which are the major phases in the waterfall model of software development? Which phase consumes the maximum effort for developing a typical software? | 2(Understand) | CO1 |
| 8. | State whether the following statements are TRUE o r FALSE. Give reasons behind your answers.<br>"The number of phases in the spiral life cycle model is not fixed and is normally determined by the project managers as the project progresses." | 2(Understand) | CO1 |
| 9. | State whether the following statements are TRUE o r FALSE. Give reasons behind your answers.<br>"RAD would be a suitable life cycle model for developing a commercial operating system." | 3(Apply) | CO1 |

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| 10. | Which life cycle model would you follow for developing software for each of the following applications? Mention the reasons behind your choice of a particular life cycle model.<br><br>(a) A well-understood data processing application.<br>(b) A new software that would connect computers through satellite communication.<br>Assume that your team has no previous experience in developing satellite communication software.<br>(c) A software that would function as the controller of a telephone switching system<br>(d) A new library automation software that would link various libraries in the city.<br>(e) An extremely large software that would provide, monitor, and control cellular communication among its subscribers using a set of revolving satellites. | 2(Understand) | CO1 |
| 11. | Briefly explain the V&V SDLC model and answer the following specific questions pertaining to the V&V SDLC.<br>(a) What are the strengths and weaknesses of the V-model?<br>(b) Outline the similarities and differences of the V-model with the Iterative waterfall model.<br>(c) Give an example of a development project for which V-model can be considered appropriate and also give an example of a project for which it would be clearly inappropriate. | 1(Remember) | CO1 |
| 12. | With respect to the prototyping model for software development,<br>answer the following:<br>(a) What is a prototype?<br>(b) Is it necessary to develop a prototype for all types of projects?<br>(c) If you answer to part (b) of the question is no, then mention under what circumstances is it beneficial to construct a prototype.<br>(d) If your answer to part (b) of the question is yes, then explain does<br>construction of a prototype always increase the overall cost of software development. | 2(Understand) | CO1 |
| 13. | What are the different categories of software development projects according to the COCOMO estimation model? Give an example of software product development projects belonging to each of these categories. | 2(Understand) | CO1 |
| 14. | What do you mean by project size? What are the popular metrics to measure project size? How can the size of a project be estimated during the project | 2(Understand) | CO1 |

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| | planning stage? | | |
| 15. | What are the different levels of CMM model?What do you understand by CMMi.Differentiate between CMM model and CMMi. | 2(Understand) | CO1 |
| 16. | Why is the SRS document also known as the black-box specification of a system? | 2(Understand) | CO1 |
| 17. | State whether the following statements are TRUE o r FALSE. Give reasons for your answer.<br>Applications developed using 4GLs would normally be more efficient and run faster compared to applications developed using 3GL.<br>(b) A formal specification cannot be ambiguous.<br>(c) A formal specification cannot be incomplete.<br>(d) A formal specification cannot be inconsistent. | 3(Apply) | CO1 |
| 18. | If the prototyping model is being used in a development effort, is it necessary to develop a requirements specification document? | 3(Apply) | CO1 |
| 19. | Discuss the important ways in which a well formulated SRS document can be useful to various stakeholders. | 3(Apply) | CO1 |
| 20. | What are the four types of non-functional requirements that have been suggested by IEEE 830 standard document. Give one example of each of these categories of requirements. | 2(Understand) | CO1 |
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