Long Questions

1. What are the functional units of a computer?

2. Explain the components of CPU.

3. Describe the hierarchy of memory.

4. What are the types of memory?

5. Give examples of input devices.

6. Provide examples of output devices.

7. What is systems software?

8. Explain application software.

9. Define packages in software.

10. What are frameworks in software development?

11. What is an Integrated Development Environment (IDE)?

12. Discuss the first generation of computers.

13. Describe the second generation of computers.

14. Explain the third generation of computers.

15. Discuss the fourth generation of computers.

16. Define the fifth generation of computers.

17. What is the primary function of the input unit in a computer?

18. What is the function of the output unit in a computer?

19. How does the control unit contribute to CPU operation?

20. What role does the ALU play in CPU operation?

21. What is the purpose of cache memory in the memory hierarchy?

22. How does RAM differ from ROM?

23. Give an example of an operating system.

24. Provide examples of utility programs.

25. What is the difference between system software and application software?

26. Name a popular word processing software.

27. Give an example of a programming language framework.

28. Name an Integrated Development Environment (IDE) commonly used for Java development.

29. What were the primary storage devices used in the first generation of computers?

30. Which input device allows users to interact with graphical user interfaces (GUIs) by moving a pointer on the screen?

31. What is the Waterfall Model in software development?

32. Explain Agile methodology in software development.

33. What are the different types of computer languages?

34. What are the steps involved in program development?

35. How do flowcharts aid in program development?

36. Define an algorithm in the context of computer science.

37. What are data structures, and why are they important in computer science?

38. Discuss the types of data structures commonly used in computer science.

39. Explain the advantages of using the Waterfall Model in software development.

40. What are the drawbacks of the Waterfall Model in software development?

41. Discuss the principles of Agile methodology.

42. Explain the role of programming languages in software development.

43. Differentiate between markup and scripting languages.

44. Discuss the advantages of Agile methodology in software development.

45. What are the disadvantages of Agile methodology in software development?

46. Explain the concept of flowcharts in program development.

47. What are the key elements of a flowchart?

48. Discuss the steps involved in program development.

49. Explain the significance of algorithms in computer science.

50. Discuss the characteristics of a well-designed algorithm.

51. Define data structures and their importance in computer science.

52. What are the common types of data structures used in computer science?

53. Explain the concept of arrays as a data structure.

54. Discuss the characteristics of linked lists as a data structure.

55. What are the key characteristics of stacks as a data structure?

56. Explain the concept of queues as a data structure.

57. What are the characteristics of trees as a data structure?

58. Explain the concept of graphs as a data structure.

59. Discuss the challenges associated with using graphs as a data structure.

60. Explain the advantages of using graphs as a data structure.

61. What are the main functions of an operating system (OS)?

62. How does an operating system manage memory in a computer system?

63. Explain the process management system in operating systems.

64. How do operating systems handle input and output operations?

65. Discuss the role of an operating system in ensuring system security and privacy.

66. What are the differences between batch operating systems and time-sharing operating systems?

77. Explain the concept and advantages of distributed operating systems.

68.   How do real-time operating systems differ from conventional operating systems?

69.   Discuss the characteristics and use cases of multiprogramming and multiprocessing operating systems.

70. What are embedded operating systems, and where are they commonly used?

71. Explain how operating systems manage hardware devices and drivers.

72. Discuss the strategies used by operating systems for disk scheduling and management.

73. How do operating systems manage and allocate resources in a multi-user environment?

74. What is virtual memory, and how do operating systems implement it?

75. Explain the concept of file system management in operating systems.