

AL HUDA SCIENCE ACADEMY

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Most Important Long Questions of Computer

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LONG QUESTIONS

Group A — Systems, Computer Science & Von Neumann Architecture

1. Define and describe the concept of a system. Explain the fundamental components, objectives, environment, and methods of communication within a system.
2. Define system theory. Describe two key properties of the system environment.
3. What is computer science? How are the methods of natural science and design science used to understand computer science?
4. Explain the Von Neumann architecture of a computer. Include a discussion on the main components, their functions, and the step-by-step process of how the architecture operates.
5. Discuss the characteristics, advantages, and disadvantages of the Von Neumann architecture.

Group B — Computer Networks

6. Discuss the objectives of computer networks and provide examples of how they facilitate resource sharing and data communication.
7. Describe network as a system. Discuss its primary components.
8. Define data communication. Discuss the components of data communication.
9. What are networking devices? Explain how they work in a computer network.
10. Compare and contrast the different types of network topologies (star, ring, bus, and mesh).
11. What is network topology? Explain different types of network topologies with examples. Also discuss their advantages and disadvantages.
12. What is data transmission mode? Explain its types with examples.
13. What is the OSI networking model? Also describe the different layers of the OSI model with examples.
14. Define IP address. Also discuss the two primary versions of IP addresses.
15. Discuss the role and importance of protocols in data communication. Explain the functions of key protocols such as TCP/IP, HTTP, DNS, and DHCP.
16. Describe real-world applications of computer networks in business, education, and healthcare (with examples).

Group C — Data, Computational Thinking & Entrepreneurship

17. Explain the differences between qualitative and quantitative data. Provide examples of each type.
18. Define qualitative data. Explain the key characteristics of qualitative data with examples.
19. Analyse the benefits and challenges of using digital tools like Google Forms for data collection.

20. What is data collection? Discuss its different data collection methods.
21. Discuss different types of data with respect to storage and processing.
22. What is data preprocessing? Discuss various techniques for data preprocessing.
23. What is the purpose of data analysis techniques? What are two techniques used for data analysis?
24. Describe different collaborative tools and cloud storage.
25. Explain why entrepreneurship is important for economic growth and innovation. Provide examples from the text to support your answer.
26. How has the digital age changed entrepreneurship? Which digital technologies help entrepreneurs grow their businesses?
27. What is business idea generation? Explain the steps used in this process.
28. Describe the process of developing business plans. Discuss its components.
29. Explain the term "ethical and sustainable entrepreneurship."

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