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Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)

Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – May 2025**IV Semester****Class : II UG****Major : Computer Science****Time: 3 Hours****Max. Marks: 100****23BCSC07 Computer Networks****Course Outcomes:****CO1: Explain the reference models of networks and fundamentals of networks****CO2: Describe the switching mechanisms****CO3: Analyse the Data Link Layer functions and the protocols associated with it****CO4: Analyse the Multiple Access protocols and the functions of the network layer****CO5: Outline the Transport Layer and Application Layer Functions and Protocols****Part A****10 x 1 =10****Choose the Correct Answer**

1. Which network topology has all nodes connected to a central device? CO1 K1
a. Bus b. Ring
c. Star d. Mesh
2. Which technique is used to convert digital signals into analog for transmission over analog media? CO1 K2
a. Pulse Code Modulation (PCM) b. Frequency Division Multiplexing (FDM)
c. Digital-to-Analog Modulation d. Time Division Multiplexing (TDM)
3. Which switching technique requires a dedicated path before transmission? CO2 K1
a. Packet Switching b. Circuit Switching
c. Message Switching d. Virtual Circuit Switching
4. Which of the following is a broadband technology used for high-speed internet via telephone lines? CO2 K2
a. Dial-Up Modem b. DSL (Digital Subscriber Line)
c. Coaxial Cable d. Optical Fiber
5. Which of the following is an error detection technique? CO3 K1
a. Hamming Code b. Go-Back-N ARQ
c. Stop-and-Wait ARQ d. Flow Control
6. Which protocol is commonly used for point-to-point communication on the internet? CO3 K2
a. Ethernet b. Point-to-Point Protocol (PPP)
c. CSMA/CD d. UDP
7. Which multiple access protocol is used in Ethernet? CO4 K1
a. CSMA/CD b. CSMA/CA
c. TDMA d. FDMA
8. Which network device operates at the network layer of the OSI model? CO4 K2
a. Switch b. Hub
c. Router d. Bridge
9. Which protocol provides reliable, connection-oriented communication at the transport layer? CO5 K1
a. UDP b. TCP
c. IP d. ICMP
10. Which protocol translates domain names to IP addresses? CO5 K2
a. FTP b. DNS
c. HTTP d. SMTP

Part B
Answer ALL questions
Each answer should not exceed 400 words or two pages

5 x 6 = 30

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| 11.a. Analyse the Design issues for the Network Topologies.
(or) | CO1 K2 |
| 11.b. Classify the Parallel and Serial Transmission types. | CO1 K3 |
| 12. a. Describe about Packet Switching in detail.
(or) | CO2 K1 |
| 12.b. Explain the process of using Cable TV for data transfer. | CO2 K2 |
| 13. a. Summarize about Error Correction techniques.
(or) | CO3 K1 |
| 13.b. Explain the Go-Back-N ARQ with suitable example. | CO3 K3 |
| 14. a. Explain the Ethernet LANS in detail.
(or) | CO4 K2 |
| 14.b. Develop about the Internet Control Protocol. | CO4 K3 |
| 15.a. Sketch the Three way Handshake Services in details.
(or) | CO5 K1 |
| 15.b. Give an overview of WWW and HTTP Protocols. | CO5 K2 |

Part C
Answer ALL questions
Each answer should not exceed 800 words or four pages

5 x 12 = 60

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| 16.a. Discuss on overview of OSI reference model with suitable example.
(or) | CO1 K1 |
| 16. b. Detail discussion about the Multiplexing techniques. | CO1 K2 |
| 17. a. Explicate on the Connectionless data-gram switching with example.
(or) | CO2 K2 |
| 17.b. Discuss about Connection oriented virtual circuit switching. | CO2 K3 |
| 18.a. Examine the Framing and Flow control allocation in details.
(or) | CO3 K1 |
| 18.b. Summarize about Stop and Wait ARQ with example. | CO3 K2 |
| 19.a. Elucidate the CSMA/CD protocols in details.
(or) | CO4 K1 |
| 19.b. Infer the Routing algorithms in detail. | CO4 K3 |
| 20.a. Enumerate the Transport services in detail.
(or) | CO5 K1 |
| 20.b. Describe on the overview of Application layer protocols. | CO5 K2 |
