



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

SUMMER-2024	
Exam Seat No.:	
Academic Year:2023-2024	Semester:IV
Class:SY B.Tech. Computer Science and Design	Program:B.Tech
Branch Code:CSD	Pattern:2022
Name of Course:Computer Networks	Course Code:CSD222014
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains __02__ page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

Question No. 1 Attempt following Question

- 1 Explain working of Hubs, Switches and Routers (6) CO1

Question No. 2 Attempt following Question

- 2 What is DNS? Explain with suitable example process of delivering of requested web page on your computer (6) CO2

Question No. 3 Attempt following Question

- 3.a) Explain flow control in TCP. (6) CO3

OR

- 3.b) Explain TCP congestion control algorithm with respect to additive-increase, multiplicative decrease, slow start mechanism. (6) CO3

- 3.c) Explain UDP header structure and state significance of each field in UDP header. (5) CO3

OR

- 3.d) Explain SCTP protocol in detail also draw its packet header in detail. (5) CO3

- 3.e) Discuss QoS in Computer Networking ? Explain QoS parameters. (5) CO3

OR

- 3.f) Explain Three- way handshake process in TCP (5) CO3

Question No. 4 Attempt following Question

- 4.a) Draw and Explain IPV6 header. Explain the significance of extension header. (6) CO4

OR

- 4.b) Identify class, subnet mask, network address and broadcast address of following IP Address: (6) CO4

1) 214.25.6.3 2) 191.5.8.9 3) 5.6.45.4 4) 230.45.89.63

- 4.c) Explain Distance Vector Routing protocol with suitable example. (5) CO4

OR

- 4.d) Describe in short the importance and working of ARP protocol? What is an ARP cache (5) CO4

- 4.e) Explain IPV6 address representation in detail with suitable example. (5) CO4

OR

- 4.f) An organization is granted the block **130.34.12.64/26**. The organization needs to have four subnets with equal number of addresses in each subnet. What are the subnet addresses and range of addresses for each subnet? (5) CO4

Question No. 5 Attempt following Question

- 5.a) Solve the following to calculate Cyclic Redundancy Check (CRC) for the given data frame (6) CO5

110101001 and the generator polynomial is X^4+X^2+1 . What is the transmitted frame?

OR

- 5.b) Compare and contrast the various frame formats used in HDLC protocol (6) CO5

- 5.c) Solve the following for a 7-bit received hamming code word by a receiver is 1011011, assume the even parity state whether the receiving code word is correct or wrong? If wrong, locate the bit in error (5) CO5

OR

- 5.d) How does Slotted ALOHA improve upon the basic ALOHA protocol (5) CO5

- 5.e) Apply your understanding of the Stop-and-Wait Automatic Repeat request (ARQ) protocol by building a model that illustrates its operation (5) CO5

OR

- 5.f) Build a comprehensive flowchart that models the Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA) process. (5) CO5

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