Register No: .... Name: ....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIRST SEMESTER MCA DEGREE EXAMINATION (R), DECEMBER 2023

(2021 SCHEME)

Course Code:	**21CA104**
Course Name:	**Advanced Computer Networks**
Max. Marks:	**60** **Duration: 3 Hours**

PART A
(Answer all questions. Each question carries 3 marks)

1. Distinguish between SMTP and POP3 protocols.
2. Draw and give a short note on TCP header section.
3. With the help of a figure, state the relevance of Go-Back-N protocol.
4. UDP uses port number and not process id. Comment on this statement and justify your answer.
5. Draw IPV4 datagram format. State the need of checksum field in IPV4 header.
6. Determine the classes to which the following IP addresses belong in a classful addressing.
   - i. 122.34.45.133
   - ii. 192.0.233.26
   - iii. 130.12.12.12.
7. Compute the 16-bit checksum generated for transmitting the following block of data:

   0110011001100100010101010101.
8. Give a short note on
   i) Ethernet
   ii) Functions of bridge
   iii) Limitations of bridge.
9. Write a short note on SNMP.
10. What are IEEE 802.11 networks? Give a brief description on it.

PART B
(Answer one full question from each module, each question carries 6 marks)

MODULE I

11. Draw and explain seven layered network architecture.   (6)

OR

12. a) Explain HTTP.   (2)

b) Illustrate and summarize non-persistent and persistent HTTP connections. (4)

MODULE II

13. Illustrate the connection-oriented transport layer protocol. (6)

OR

14. An application developer might choose to run an application over UDP rather than TCP. Comment on this statement and justify your answer. (6)

MODULE III

15. By illustrating the datagram format, elaborate the concept of IPV6. (6)

OR

16. Determine and describe the intradomain routing protocols based on the distance vector routing algorithms. (6)

MODULE IV

17. Illustrate the working of CSMA/CD. (6)

OR

18. Explain the working of ARP in detail. (6)

MODULE V

19. With the help of a diagram, demonstrate how network address translation (NAT) is done. (6)

OR

20. a) What is firewall? (2)
    b) With the help of diagrams, explain packet filter firewall and proxy-based firewall. (4)

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