

G 1695

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Eighth Semester**

Branch : Applied Electronics and Instrumentation Engineering

AI 010 803—COMPUTER NETWORKS (AI)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*



1. What is packet switching ?
2. Illustrate diagrammatically non return to zero (NRZ) encoding of the bit stream 0010111101000010.
3. What are learning bridges ?
4. How to set TCP timeout value ?
5. What are peer-to-peer networks ?

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Illustrate diagrammatically point-to-point and multiple-access links and discuss the same.
7. What kind of problems can arise when two hosts on the same Ethernet share the same hardware address ? Describe what happens and why that behaviour is a problem.
8. Explain broadcast and multicast with example.
9. How TCP flow control works ?
10. What is a domain name system (DNS) ? Discuss with an example.

(5 × 5 = 25 marks)

Turn over

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. Explain with diagrammatic illustration Open Systems Interconnection (OSI) network architecture.  
*Or*
12. List and discuss the various factors that impact network performance.
13. What is framing ? Explain High-level Data Link Control (HDLC) bit oriented protocol.  
*Or*
14. Suppose we want to transmit the message 11001001 and protect it from errors using the cyclic redundancy check (CRC) polynomial  $x^3 + 1$ .  
(a) Use polynomial long division to determine the message that should be transmitted. (4 marks)  
(b) Suppose the leftmost bit of the message is inverted due to noise on the transmission link, what is the result of the receiver's CRC calculation ? How does receiver know that an error has occurred ?
15. Explain virtual circuit switching with example and diagrammatic illustration. (8 marks)  
*Or*
16. Discuss with example and diagrammatic illustration distance-vector routing algorithm.
17. Explain with diagrammatic illustrations connection establishment and connection release in Transmission Control Protocol (TCP).  
*Or*
18. Discuss TCP congestion avoidance with example and diagrammatic illustrations.
19. Discuss how Simple Mail Transfer Protocol (SMTP) works. Can multimedia messages be transmitted using SMTP ? Explain.  
*Or*
20. Discuss WSDL and SOAP frameworks used for specifying and implementing application protocols and transport protocols. (5 × 12 = 60 marks)

