

(3 Hours)

Total Marks : 100

PI March 2012
2nd April, 2012

- N.B. : (1) All questions are compulsory.
(2) Figures to the right indicate marks.
(3) Illustrations, in-depth answers and diagrams will be appreciated.
(4) Mixing of sub-questions is not allowed.

1. Write short notes on (Any four) : —
 - (a) WDM 5
 - (b) Ethernet Frame 5
 - (c) RARP 5
 - (d) DMZ 5
 - (e) Time Division Switch 5
 - (f) FTP 5

2. Attempt the following (any four) :—
 - (a) What is meant by serial transmission ? List its types and explain any one in detail. 5
 - (b) Explain the concept of FHSS with a diagram. 5
 - (c) Encode the data sequence 010011 using Manchester and Differential Manchester encoding scheme. 5
 - (d) What is a Circuit Switched Network ? Explain its three phases. 5
 - (e) Identify the five components of a data communication system. 5
 - (f) List and explain the characteristics of an Analog signal. 5

3. Attempt the following (any four) :—
 - (a) Demonstrate the working of a CRC Encoder and Decoder (using binary division) when the dataword is 100100 and the divisor is 1101. Also assume that there is no error in transmission. 5
 - (b) Write a note on the networks in Bluetooth. 5
 - (c) What are Backbone Networks ? List its types and explain anyone in detail. 5
 - (d) Explain the concept of classes in classful addressing. 5
 - (e) With the help of a flow diagram, Explain the working of Stop-N-Wait ARQ. 5
 - (f) Explain the working of Polling access in detail. 5

4. Attempt the following (any four) :—
 - (a) What is resolution in context of DNS ? Explain anyone of its resolution techniques. 5
 - (b) Discuss any two ways to perform transition from IPv4 to IPv6. 5
 - (c) What is meant by Closed-loop congestion control ? Explain any two closed-loop congestion control policies. 5
 - (d) With the help of a diagram explain the implementation of sending and receiving buffers in TCP. 5
 - (e) Write a short note on QoS and Flow Characteristics. 5
 - (f) Explain the concept of Port Numbers with respect to networking. 5

5. Attempt the following (any four) :—
 - (a) Explain the characteristics and limitations of a firewall ? 5
 - (b) Perform encryption of the message "ATTACK IS TODAY" using Autokey Cipher with key = 12. 5
 - (c) Name and Explain any five types of viruses. 5
 - (d) Explain any 5 security mechanisms which can be incorporated into a protocol layer to provide security services. 5
 - (e) Explain the working of digital signatures with a diagram. 5
 - (f) Explain how are Symmetric Key and Asymmetric Key Encryption-Decryption operations performed. 5

