Con. 1405-12. (REVISED COURSE) EX-6516

(3 Hours) [Total Marks : 100

P I 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

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