

**CS/B.TECH/EIE-New/SEM-7/EI-705A/2013-14**

**2013**

**COMPUTER NETWORKING**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**

**(Multiple Choice Type Question)**

1. Choose the correct alternatives for the following: 10 x 1 = 10
  - i) Which of the following statement(s) is/are TRUE about datagram?

P : Each packet contains the full source and destination address

Q : Two packets between a source and destination can follow different paths.

a) P only	b) Q only
c) Both P & Q	d) Neither P nor Q.
  - ii) Identify the class of IP address 229.1.2.3

a) Class A	b) Class B
c) Class C	d) Class D.

iii) Match the following **A** with **B**:

	<b>A</b>	<b>B</b>
a)	Format and code conversion services	m) Session layer
b)	Establishes, manages and terminates sessions	n) Application
c)	Ensures reliable transmission of data	o) Transport layer
d)	Log-in and log-out procedures	p) Presentation layer

**a      b      c      d**

- a) p    m    o    n
- b) m    o    p    n
- c) n    p    m    o
- d) p    o    n    m

iv) We use \_\_\_\_\_ algorithm in Link State Routing and \_\_\_\_\_ algorithm in Distance Vector Routing for shortest path.

- a) Dijkstra's Algorithm, Bellman Ford Algorithm
- b) Bellman Ford Algorithm, Dijkstra's Algorithm
- c) Prim's Algorithm, Bellman Ford Algorithm
- d) Dijkstra's Algorithm, Kruskal's Algorithm.

v) In which routing there is a concept of Speaker Node?

- a) Distance vector routing
- b) Link state routing
- c) Path vector routing
- d) Both Path vector and Distance vector routing.

- vi) Repeater functions in \_\_\_\_\_ layer(s).
- a) Physical(MAC)                      b) Data link  
 c) network                                d) both (a) and (b).

vii) Match the following:

- |                       |         |
|-----------------------|---------|
| I. Datalink layer     | P) POP3 |
| II. Network layer     | Q) UDP  |
| III. Transport layer  | R) RARP |
| IV. Application layer | S) PPP  |

- |    | <b>I</b> | <b>II</b> | <b>III</b> | <b>IV</b> |
|----|----------|-----------|------------|-----------|
| a) | P        | Q         | R          | S         |
| b) | P        | R         | Q          | S         |
| c) | S        | Q         | R          | P         |
| d) | S        | R         | Q          | P         |

viii) The position of SSL in TCP/IP protocol suite is

- a) between transport and internet layer  
 b) between data link and physical layer  
 c) between application and transport layer  
 d) none of these.

ix) Maximum size of the data portion of the IP datagram is

- a) 65515 bytes                              b) 65555 bytes  
 c) 65535 bytes                              d) none of these.

- x) Frame relay operates in the
- a) physical layer
  - b) data link layer
  - c) physical and data link layer
  - d) physical, data link and network layer.

### **GROUP – B**

#### **(Short Answer Type Questions)**

Answer any *three* of the following. 3 x 5 = 15

- 2. Explain about message switching with proper diagram.
- 3. Explain the principle of Go-back-N ARQ
- 4. Indicate the characteristics of BGP.
- 5. What is firewall? How does firewall rule chain work? 2+3
- 6. Draw various fields in IP packet header. What is the significance of total length field? 4+1

### **GROUP – C**

#### **(Long Answer Type Questions)**

Answer any *three* of the following. 3 x 15 = 45

- 7.
  - a) Explain about IP addressing with its type. Why is it needed for Networking?
  - b) Explain Leaky bucket algorithm for congesting control. (8+2)+5
- 8.
  - a) Explain about ALOHA.
  - b) How does CRC detect the error in a bit stream? Explain with example.
  - c) How does fibre-optic work? Explain. 5+5+5

9. Explain about the various modes of data transfer. Explain the property of flow control. Explain the path vector routing. What is Subnet mask in networking? 3+5+4+3
10. Explain the function of various layer in TCP/IP. What is packet filter firewall? Why is it needed? How would you correct a single bit error of a sending bit stream? Explain with proper example. 7+2+1+5
11. What is DHCP? What different types of messages are there? Explain DHCP message format. Explain the lease renewal process. What are interior routing and exterior routing? 2+2+3+4+4

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