



[4459] – 257

Seat No.	
-------------	--

**T.E. (Computer Engineering) Examination, 2013
COMPUTER NETWORKS (310250)
(2008 Course)**

Time : 3 Hours

Max. Marks : 100

- Instructions :** 1) Answer **3** questions from Section I and **3** questions from Section II.
2) Answers to the **two** Sections should be written in **separate** books.
3) **Neat** diagrams must be drawn **wherever** necessary.
4) **Black** figures to the **right** indicate **full** marks.
5) Assume **suitable** data, if **necessary**.

SECTION – I

1. a) Assume that you are downloading a movie through a browser on a computer. Explain step by step things that happen at every layer on client side and server side. Assume both uses TCP/IP protocol stack. **8**
- b) What is DNS ? Explain in brief hierarchical structure of DNS. **8**

OR

2. a) Assume that you are purchasing goods online using Flipkart. Explain the role of TCP/IP protocol stack in this transaction. **8**
- b) Explain functionality of DHCP server, Proxy server, File server, Web server. **8**

P.T.O.



- 3. a) Explain functionality of TCP. Explain flow control in detail. **6**
- b) Draw TCP header. Explain significance of each field in TCP header. **6**
- c) Explain multiplexing and de-multiplexing in transport layer. **6**

OR

- 4. a) "UDP does not guarantee reliability in data transfer but delivered data is error free ". Justify this statement. **6**
- b) What is socket ? List and explain various socket primitives required in UDP socket program on client and server side. **6**
- c) Draw and explain UDP header. What is pseudo header ? Why it is required ? **6**

- 5. a) Discuss techniques used for achieving QoS (Quality of Service). **8**
- b) What is congestion ? List various network parameters affected due to congestion. **8**

OR

- 6. a) Explain in brief the terms RTT, CW(Cong Win) and AIMD for TCP. **8**
- b) What is traffic shaping ? Discuss any two algorithms used for traffic shaping. **8**

SECTION – II

- 7. a) Describe in short the importance and working of ARP and RARP protocol ? **8**
- b) Draw and compare IPV4 and IPV6 header. **8**

OR

- 8. a) Consider a class-C network which needs to be subnetted into 5 subnets. Calculate the appropriate network mask. How many number of hosts can be supported by each subnet ? **8**
- b) What is ICMP ? Explain the functionalities which make this protocol effective. **8**



9. a) What is Path Vector routing ? Discuss its advantages over Distance Vector routing. **8**
- b) What are design principles of Ad-hoc Routing protocols ? **8**

OR

10. a) What is a difference between Forwarding and Routing ? **8**
- b) What are design principles of good routing algorithm ? **8**
11. a) Explain the working of Hubs, Switches and Routers. **6**
- b) What is Simplex Stop and Wait ? State assumptions made in this protocol. **6**
- c) Draw and explain state transition diagram of PPP. **6**

OR

12. a) Draw and explain HDLC frame format. **6**
- b) Differentiate between Bridge, Router and Switches. **6**
- c) Explain in brief PPP stack. Discuss protocols for authentication. **6**