**53 (EC 604) CMNW**

## 2017

# COMMUNICATION NETWORK

Paper : EC-604

*Full Marks : 100*

Time : Three hours

### *The figures in the margin indicate full marks for the questions.*

*Answer **any five** questions.*

1. *(a)* Describe internet as a connectionless, datagram switching network. Give relevant diagram. Elaborate routing and routing table. 7

   *(b)* Differentiate between *TCP* and *IP*. 5

   *(c)* Discuss the functioning of TELNET for remote log-in. 8

2. *(a)* Discuss stop-and-wait ARQ protocol. Mention its important features. 8

*(b)* Discuss about the structure, performance, connectors and application areas of Twisted-pair cables (UTP and STP).                   8

*(c)* Write a brief note on ATM multiplexing.                   4

3.   *(a)* What are the improvements of IPv6 over IPv4 ?                   4

*(b)* What are resolutions and resolver in context of DNS ? What is the need for DNS ?                   4+4=8

*(c)* Explain the general architecture of e-mailing system.                   8

4.   *(a)* Discuss about TCP/IP protocol suite.                   5

*(b)* The value of the total length field in an IPv4 datagram is 36 and the value of the header length field is 5. How many bytes of data is the packet carrying ?                   3

*(c)* Explain different closed-loop congestion control techniques.                   10

*(d)* What do you mean by piggybacking ?                   2

5. *(a)* Discuss about various standard ethernet variants. 7

*(b)* Find the range of addresses in the following block : 6

123.56.77.32/29

*(c)* Explain the general architecture of e-mailing system. 7

6. *(a)* How does an NNI differ from a UNI ? How is an ATM virtual connection identified ? 2+2=4

*(b)* Differentiate between an ethernet switch and a hub. 3

*(c)* An IPv4 fragment has arrived with an offset value of 100. How many bytes of data are originally seat by the source before the data in this fragment ? 3

*(d)* Discuss three-way handshaking of connection establishment in TCP. 5

*(e)* Discuss about HDLC. 5

7. *(a)* Discuss the architecture of www. 6

*(b)* Explain the differences between Iterative Resolution and Recursive Resolution. 6

*(c)* What is the significance of time-to-live field and MTU ?  4

*(d)* How is HTTP similar to FTP ?  4