(b) Describe SMTP and FTP

(c) Explain any two of the following :

i) TELNET

ii) ARP

iii) PING

—x—

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ECS-601

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 110601

Roll No.

B. Tech.

SPL. THEORY EXAMINATION, 2014-15

COMPUTER NETWORK

Time : 3 Hours] *[Total Marks : 100*

Note: Attempt all questions.

1. Attempt any four parts of the following : 5×4=20

(a) Explain OSI layer architecture in detail.

(b) How much minimum bandwidth is required to digitally transmit a analog stream which is generated at 50 k Hz after Manchester encoding?

(c) Compare and contrast circuit, message and packet switching techniques.

(d) What is ISDN? Draw the ISDN communication architecture.

(e) Explain Network Topology along with the suitable diagram.

2. Attempt any four parts of the following: 5×4=20

(a) Why is the channel throughput doubled in slotted ALOHA compared to pure ALOHA?

(b) Explain CSMS/CD protocol.

(c) What are the different types of error detection methods? Explain the CRC error detection technique using generated polynomial :

$X^4 + X^3 + 1$ and data 11100011.

(d) Explain Go- back n ARQ and Selective Repeat ARQ protocol.

(e) Discuss sliding window Protocol with suitable diagram.

3. Attempt any four parts of the following: 5×4=20

(a) Explain token bucket algorithm. What problems of leaky bucket algorithm are addressed by it?

(b) Discuss Fragmentation. Also explain transparent and non-transparent strategy of fragmentation.

(c) Explain Firewall.

(d) Discuss broadcast routing and multicast routing.

(e) Compare and contrast between IPv4 and IPv6.

4. Attempt any two parts of the following: 10×2=20

(a) What is cryptography. Discuss Symmetric key cryptography and Asymmetric key cryptography.

(b) Write algorithm of RSA encryption. Using the RSA public key cryptosystem, with a=1, b=2 etc and p=5, q=11, d=27, find e.

(c) Determine the performance comparison of TCP and UDP.

5. Attempt any two parts of the following: 10×2=20

(a) Explain any two of the following:

i) DNS

ii) E-mail

iii) MIME