

(Please write your Exam Roll No.)

Exam Roll No.

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.] DEC-2010

Paper Code: ETIT 405

Subject: Network Technology

Time : 3 Hours

Maximum Marks :75

Note: Question 1 is compulsory. Answer any FOUR from the remaining questions. All question carry equal marks.

1. Answer the following

- | | |
|--|---|
| a. Explain various network security issues. | 2 |
| b. Give the functionality of various components in SMTP. | 2 |
| c. Explain features of LAN manager | 2 |
| d. Explain SDH/SONET. | |
| e. Give applications of synchronous and asynchronous data transfer with their network protocols. | 2 |
| f. Explain features of state and stateless routing. | 2 |
| g. Draw the block diagram of SNMP and give its working. | 3 |

2.

- | | |
|---|---|
| a. Compare OSI layer and TCP/IP protocol suite layers. | 5 |
| b. Explain the working of internet search engines with respect to network technology and protocols. | 6 |
| c. Give the functionality of the following: | 4 |
| i. Perl | |
| ii. CGI | |

3.

- | | |
|---|---|
| a. Explain PPP protocol. Give its packet format and transition phases. | 5 |
| b. Explain the working of DHCP protocol. | 5 |
| c. A host with IP address 108.67.18.70 sends a limited broadcast packet to all hosts in the same network. Give the source and destination IP address used in this packet? | 5 |

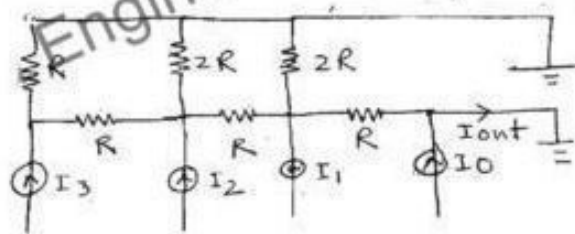
4.

- | | |
|--|---|
| a. Compare the working of synchronous and asynchronous modems. | 4 |
| b. Draw the block diagram of USART - 8251A with its relevant transmitter and receiver components. Explain its working. | 6 |
| c. Explain features of ATM and give its limitations. | 5 |

- 5.
- a. Compare the following routing protocols and give their performance. 9
 - i. RIP
 - ii. BGP
 - iii. OSPF
 - b. Explain FDDI. Give its advantages and its limitations. 3
 - c. Mention components in serial communication devices. Explain network parameters considered in serial communication. 3
- 6.
- a. Explain FTP and Telnet application layer protocols. 5
 - b. Explain various types of records used in DNS. 6
 - c. Give salient features of WAIS and UseNet. 4
7. Write short notes from any *three* of the following: 3x5 = 15
- a. Ethernet Standards
 - b. Error control and error detection
 - c. ISDN
 - d. TCP packet format
 - e. Latest developments in Network Technology

[-2-]

- Q4 (a) Draw the Block diagram of high speed comparator and explain the different blocks. (8)
(b) Realize OTA as- (7)
(i) Ideal grounded inductance.
(ii) Lossy integrators.
(iii) Ideal positive grounded resistor.
- Q5 (a) Find the expression for frequency of oscillation of current-starved V_{CO} . (6)
(b) Define unity-gain Bandwidth (GB). Prove that unity-gain B.W. is given by $GB = \frac{g_m I}{C_c}$. (6)
(c) What is the limitation of two-stage opamp? (3)
- Q6 (a) If the poles of a two-stage comparator are both equal to $-10^7 R/S$, Find the maximum slope and the time it occurs if the magnitude of the Input Step is 10V in (min). What must be the SR of this comparator to avoid slewing? (8)
(b) List the advantages and disadvantages of the switched capacitor comparator over an open-loop comparator having the same gain and frequency response. (7)
- Q7 (a) A 1V peak to peak sinusoidal signal is applied to an ideal 10 bit DAC, which has a V_{REF} of 5V. Find the maximum SNR of digitized analog output signal. (5)
(b) If the quantization level of an ADC is Δ , prove that the rms quantization noise is given as $\Delta \sqrt{12}$. (5)
(c) Find I_{out} in terms of I_0, I_1, I_2 and I_3 for the circuit shown in fig.3. (5)



- Q8 Write short notes on **any two** of the following:- (7+8)
(a) MOS transistor layout.
(b) Charge injection and capacitive feed through.
(c) Two stage op-Amp.
