

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA Sem-VI Examination May 2011****Subject code: 640001****Subject Name: Fundamentals of Networking(FON)****Date:16/05/2011****Time: 02.30 pm – 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** Answer the following questions **14**
1. What is the need for MIME?
 2. What is the need for DNS in the Internet?
 3. Mention uses of a computer network.
 4. What is meant by : a) WAN b) PAN
 5. Differentiate between half duplex and full duplex channel.
 6. What is the major difference between a hub and a switch?
 7. What is meant by security by obscurity?
 8. Differentiate between symmetric and asymmetric ciphers.
 9. Differentiate between routing process and forwarding process.
 10. Differentiate between a cipher and a code.
 11. What is the major drawback of Single Bit Parity check method for error detection?
 12. What is the use of acknowledgement timer in data link layer protocols?
 13. What is meant by Attenuation with respect to signals?
 14. Differentiate between flow control and congestion control.
- Q.2** (a) 1. Compute the Hamming code for the bit pattern 1100001 **05**
 2. What is the advantage of Piggybacking and Pipelining? **02**
- (b) 1. Explain the TCP/IP layered architecture. **05**
 2. What is the advantage of using Negative acknowledgement (NAK) in data link layer protocols? **02**
- OR**
- (b) 1. Differentiate between wireless and mobile systems with example **05**
 2. Briefly explain any two forms of E-Commerce **02**
- Q.3** (a) 1. Write a note on: UTP (Unshielded Twisted Pair) Cables **03**
 2. Explain the working of fiber optic networks with diagram **04**
- (b) 1. Differentiate between packet switching and circuit switching **05**
 2. Briefly explain the need and application of ISM band in wireless communications **02**
- OR**
- Q.3** (a) 1. Write a note on: Co-axial Cables **03**
 2. Compare and contrast satellite systems with fiber optic systems **04**
- (b) 1. Briefly explain transport service primitives with respect to transport Layer **03**
 2. Explain the blue army problem in connection release in transport layer **04**

Q.4	(a)	1. Explain a) Hidden Station Problem b) Exposed Station Problem with respect to wireless networks.	04
		2. Briefly explain the working of Manchester Encoding with example	03
	(b)	1. Differentiate between non persistent, 1 persistent and p persistent CSMA/CA.	04
		2. Explain the working of MACA protocol	03
OR			
Q.4	(a)	1. Write a note on: Binary Exponential Back-off Algorithm	04
		2. What is the use of Network Allocation Vector in CSMA/CA?	03
	(b)	1. Explain the working of CSMA/CD protocol.	04
		2. Explain the working of MACAW protocol	03
Q.5	(a)	1. Explain the working and application of P-Box	04
		2. Explain the working of One-time Pads with example	03
	(b)	1. Explain the working of hop by hop choke packet method for congestion control	04
		2. Explain the milk and wine policy for congestion control	03
OR			
Q.5	(a)	1. Explain the working of Transposition or Columnar Cipher.	04
		2. Explain the working of Mono-alphabetic cipher with example.	03
	(b)	1. Explain the working of Dijkstra's shortest path algorithm with example.	04
		2. Briefly explain the concept and need for Quality of Service.	03
