

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-IV • EXAMINATION – WINTER • 2014

Subject Code: 640001

Date: 27-11-2014

Subject Name: Fundamentals of Networking (FON)

Time: 10:30 am - 01:00 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 (a)** Answer the following in short. (Each carry one mark) : **07**
- (i) Advantages of Layering Concept
 - (ii) List down Mobile Network Applications
 - (iii) Define Bandwidth
 - (iv) Define Fourier Component
 - (v) Define Baud Rate
 - (vi) Define Multipath Fading
 - (vii) Define Piggybacking
- (b)** (i) Match the following: **05**
- | | |
|------------------|---------|
| 40-100 Gbps | 802.3ap |
| Gigabit Ethernet | 802.3 |
| Fast Ethernet | 802.3z |
| 10Gb | 802.3ba |
| Classic Ethernet | 802.3u |
- (ii) Fill in the blanks: **02**
- The drawback of Distance Vector Routing Algorithm is _____ and the solution of the problem is _____.
- Q.2 (a)** Explain the terms Repeater, Hub, Bridge, Switch, Router and Gateway in brief. **07**
- (b)** Generate CRC for frame 1111011 using generator 10011. **07**
- OR**
- (b)** Compute the Hamming code for the bit pattern 1101101. Generate error bit at third bit and correct the bit at receiver's end. **07**
- Q.3 (a)** Write a short note on Error Detection and error correction. Explain all the types using examples. **07**
- (b)** Explain Go back n protocol. Also state its merits and demerits. **07**
- OR**
- Q.3 (a)** Explain difference between go back n protocol and selective repeat **07**
- (b)** Explain Selective Repeat protocol. Also state its merits and demerits. **07**
- Q.4 (a)** Write a note on: Binary Exponential Back-off Algorithm. **07**
- (b)** Explain Carrier Sense Multiple Access protocol with persistent and persistent scenarios. What is the use of Network Allocation Vector in CSMA/CA? **07**
- OR**
- Q. 4 (a)** Explain Access Point Primitives. Explain types of frames in network Communication. Also explain Inter Frame Spacing. How to manage PCF and DCF together. **07**
- (b)** White a note on Wireless Broadband. Explain its sub layers. Importance of **07**

Security in WiMax.

- | | | | |
|------------|------------|--|-----------|
| Q.5 | (a) | What is global synchronization? Explain Congestion, congestion control and Jitter. | 07 |
| | (b) | What are the limitations of SMTP? How does IMAP differ from POP3 and SMTP? | 07 |

OR

- | | | |
|------------|--|-----------|
| Q.5 | (a) Explain all the steps of Link state Routing algorithm in detail. Explain using valid figures and example. | 07 |
| | (b) List and Explain all the Cipher Modes in detail. | 07 |
