

G 1197 

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Eighth Semester**

Branch : Electronics and Communication Engineering / Applied Electronics and Instrumentation Engineering / Electronics and Instrumentation Engineering

COMPUTER NETWORKS (L A S)

(Old Scheme – Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. Explain the Significance of layering in Internet.
2. Briefly explain full duplex and half duplex communication links.
3. What are the functions of data link layer?
4. What do you mean by piggy backing? Explain the context.
5. How is crash recovery implemented in transport layer?
6. Explain the design aspects of ring network.
7. Enumerate the functions of presentation layer.
8. What is ARPANET? Explain.
9. Explain SONET frame structure.
10. Briefly explain ATM adaptation layer.

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.*

*Each full question carries 12 marks.*

11. Explain TCP/IP protocol and its layers.

*Or*

12. Explain the various transmission media's used in Internet.

**Turn over**

13. Write short notes on :

- (a) Sliding window protocol.
- (b) Stop and wait protocol.

(6 + 6 = 12 marks)

*Or*

14. (a) Explain the various digital modulation schemes used in modem.  
(b) Explain congestion control.

(8 + 4 = 12 marks)

15. (a) What is CSMA/CD? Explain its significance.  
(b) Explain the mechanism of buffering in a transport layer protocol.

*Or*

16. Explain the process of establishment and release of a connection between two users.  
17. Explain the functions performed by presentation layer.

*Or*

18. What do you mean by cryptography? Explain the principles of cryptography.  
19. Explain ATM focussing on its architecture connections and adaptation layers.

*Or*

20. Explain the frame structure and principles behind SONET.

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Eighth Semester**

Branches : Electronics and Communication Engineering/Applied Electronics and Instrumentation Engineering/Electronics and Instrumentation Engineering/Computer Science and Engineering

**MULTIMEDIA SYSTEMS—(Elective III) [LASR]**

(Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Maximum : 100 Marks

Time : Three Hours

**Part A**

*Answer all questions.  
Each question carries 4 marks.*

1. What are the constituent media of Multimedia ?
2. Explain the digitization of audio.
3. How a monochrome image is represented in a computer ?
4. What are the compressed and uncompressed image file formats ?
5. Write a note on optical storage.
6. What is Quick Time ? Explain.
7. Write a note on database integration.
8. Explain the constraints on multimedia programming.
9. What is meant by realistic image synthesis ?
10. Describe different video capturing techniques.

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.  
Each question carries 12 marks.*

11. Explain audio digitization process. With an example, bring out the file size dependencies for digitized audio.

Or

12. Analyze digital video based on the storage aspects. Use proper sketches.

**Turn over**

13. With the help of neat diagrams, explain how a colour image is represented in a computer.

*Or*

14. Describe JPEG image compression technique with the help of suitable diagrams.

15. Explain different storage technologies. Differentiate them in terms of their storage capacity and speed.

*Or*

16. With the help of diagrams, explain how digital video interactive is achieved.

17. Explain media classes and format classes in multimedia programming.

*Or*

18. Explain the issues related with multimedia programming.

19. With the help of a suitable diagram, explain the technological background for virtual reality.

*Or*

20. Write notes on :

(a) Multimedia networks.

(6 marks)

(b) Full motion digital video.

(6 marks)

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Eighth Semester**

Branch : Electronics and Communication Engineering

EC 010 801—WIRELESS COMMUNICATION (EC)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Maximum : 100 Marks

Time : Three Hours

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. What are the two types of system generated cellular interference ?
2. Find the far field distance for an antenna with maximum dimension of 1.2 m. and operating frequency of 850 MHz.
3. Discuss the non-linear effects in FDMA.
4. Give the classification of multiframes.
5. Explain the modulation technique used in DECT.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Distinguish between Fixed channel assignment strategy and Dynamic channel assignment strategy.
7. Explain Brewster angle. Calculate the Brewster angle for a wave impinging of ground having a permittivity of  $\epsilon_r = 5$ .
8. Discuss the non-linear effects in FDMA.
9. Explain channel coding for data channels and control channels.
10. Write short note on pacific digital cellular.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. Explain the method of locating cchannel cells in a cellular system.

Or

Turn over

12. Explain any *one* technique for improving the coverage and capacity in cellular system.
13. Explain small scale fading effect based on multipath time delay spread.

*Or*

14. Explain the free space propagation model for predicting the received signal strength, for a transmitter and receiver with clear LOS path in between.
15. Differentiate between FDMA and FHMA.

*Or*

16. (a) Compare the spectrum of wide band CDMA, narrow band CDMA and hybrid FH/DS system.  
(b) Explain SDMA.

17. With a neat sketch, explain GSM system architecture.

*Or*

18. Briefly explain the frame structure of GSM.

19. Explain the architecture of DECT.

*Or*

20. Explain forward CDMA channel modulation process.

(5 × 12 = 60 marks)

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**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Eighth Semester**

Branch : Electronics and Communication Engineering

EC 010 802—COMMUNICATION NETWORKS (EC)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Explain the concept of layering focusing on its advantages.
2. Give a brief description about CSMA.
3. What do you mean by virtual networks ? Explain.
4. Mention the main features of ATM.
5. Write short note on fire wall.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain circuit switching and packet switching.
7. Write short note on the scheduling approaches to medium access control.
8. How is error reporting done in ICMP ?
9. Explain how addressing and signalling is done in ATM.
10. Differentiate symmetric and asymmetric key cryptography. Explain.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. Describe the OSI model and TCP/IP model used in network architecture.

*Or*

12. With the help of neat diagrams, explain the various switching methods.

Turn over

13. Explain the various random access protocols used in networking.

Or

14. Describe in brief any *four* standards for LAN's.

15. (a) Differentiate classful and class less addressing.

(4 marks)

(b) Explain ICMP, used for error reporting.

(8 marks)

Or

16. Describe the following protocols :

(i) ARP.

(6 marks)

(ii) BGP.

(6 marks)

17. Explain the various adaptation layers in ATM.

Or

18. Describe in detail the header structure of ATM with neat diagram.

19. Explain briefly the pretty good privacy protocol.

Or

20. Describe the IP sec protocols used to provide security focussing on authentication header protocol and encapsulating security payload protocol.

(5 × 12 = 60 marks)



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**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Eighth Semester**

Branch : Electronics and Communication Engineering

EC 010 803—LIGHT WAVE COMMUNICATION (EC)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. Give the expression for calculating the : (a) Critical angle ; (b) NA ; and (c) Acceptance angle in air for the fibre.
2. Explain the phenomenon of inter symbol interference.
3. Define quantum efficiency of a photo detector.
4. Draw the energy level diagrams for erbium doped silica fiber laser.
5. List the different network topologies.
6. Write short note on SI fibres.
7. Distinguish between intrinsic absorption and extrinsic absorption.
8. Explain the LED characteristics. Compare the characteristics of surface emitters and edge emitters.
9. Compare the gain-bandwidth characteristics of different optical amplifiers.
10. Compare wavelength routing and switching network.

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.*

*Each question carries 12 marks.*

11. Write short note on single mode fibres. Compare the step index profiles of various designs.

Or

12. Explain the key terms in Ray theory transmission-critical angle and total internal reflection.

**Turn over**

13. Discuss in detail about linear scattering losses.

*Or*

14. Explain different types of fibre connectors.

15. With a neat schematic explain GaAs homo junction injection laser with a Fabry Perot Cavity.

*Or*

16. Explain about the different types of semiconductor photo diodes without internal gain.

17. Explain in detail the operation of Machzender interferometer.

*Or*

18. Compare wave guide amplifiers and fibre amplifiers.

19. Discuss link power budget and rise time budget analysis.

*Or*

20. Explain wavelength switching network architecture employing a multi-granular optical cross connect.

(5 × 12 = 60 marks)

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**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Eighth Semester**

Branch : Electronics and Communication Engineering

EC 010 804 L03—SECURE COMMUNICATION (Elective III) [EC]

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Distinguish between Equality and Congruence operators in Modular arithmetic.
2. Encrypt the message "CREATE" using additive Cipher with key = 5.
3. What is IDEA ?
4. List out the essential steps for public key encryption process.
5. Distinguish between Masque radar and Misfeasor.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. What is a ring ? Distinguish between Ring and Commutative Ring.
7. What is a play fair Cipher ? Discuss the rules for encrypting the play fair Cipher.
8. Write notes on security of DES.
9. Explain the computational steps involved in RSA algorithm.
10. What are the techniques used for the protection of passwords ?

(5 × 5 = 25 marks)

**Turn over**

## Part C

Answer all questions.  
Each full question carries 12 marks.

11. Discuss the following :—

- (a) Irreducible polynomial.                      (b) Finite field.  
(c) Abelian group.                                      (d) Residue integers.

(4 × 3 = 12 marks)

Or

12. Using the extended Euclidean algorithm find the inverse of  $(x^2 + 1)$  modulo  $(x^4 + x + 1)$  in  $GF(2^4)$ .

13. Describe different poly alphabetic Ciphers with suitable examples.

Or

14. What is a Hill Cipher ? Use the Hill Cipher to encrypt the message "give me the secret key" with

$$\text{key } K = \begin{bmatrix} 03 & 02 \\ 05 & 07 \end{bmatrix}$$

15. Explain Key generation of DES.

Or

16. Explain the steps involved in the implementation of AES.

17. Explain the cryptanalytical implementation of RSA.

Or

18. Briefly describe the steps involved in the distribution of public keys.

19. (a) Discuss the method of distributed intrusion detection. (6 marks)

(b) Explain the intrusion detection exchange format. (6 marks)

Or

20. (a) Discuss in detail about honey pots. (6 marks)

(b) List out the techniques for learning passwords. (6 marks)

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Eighth Semester**

Branch : Electronics and Communication Engineering

EC 010 805 G02—E-LEARNING (Elective IV) (EC)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. What are the roles of e-learning ?
2. What is interactive Television ?
3. What is information search services ?
4. What is co-operative Learning ?
5. What are the challenges in e-learning ?

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Discuss different components of e-learning.
7. Discuss the features of Video conferencing.
8. Discuss learning objects.
9. Explain the role of teachers in e-learning.
10. Explain the Quality in e-learning.

(5 × 5 = 25 marks)

Turn over

**Part C***Answer all questions.**Each question carries 12 marks.*

11. Discuss the Roles and Responsibilities of Subject matter Expert.

*Or*

12. What are the barriers of e-learning ?

13. Discuss the role of e-mail, Chat and File Sharing in learning.

*Or*

14. How can you use teleconferencing as a technique for learning ?

15. Discuss the steps involved in process of e-learning.

*Or*

16. Describe the content and trends in e-learning.

17. Discuss the Role of Teachers in e-learning.

*Or*

18. Discuss different Interactions in e-learning.

19. Write a note on Assessment in e-learning.

*Or*

20. Describe various costs for the development of an e-learning environment.

**(5 × 12 = 60 marks)**