F 6651 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

Eighth Semester

Branch : Electronics and Communication Engineering

EC 010 802—COMMUNICATION NETWORKS (EC)

(New Scheme—2010 Admission onwards)

[Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

Each question carries 3 *marks.*

1. What is message switching ?
2. State the functions performed by a repeater.
3. What is dynamic host configuration protocol used for ?
4. How can virtual channels / paths be identified in ATM networks ?
5. What is a digital signature ?

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*

Each question carries 5 *marks.*

6. Compare connection oriented and connectionless service.
7. Explain the working of ALOHA protocol.
8. How address resolution protocol works ? Give example.
9. List and discuss the ATM adaptation layer functions.
10. Explain passive attacks and active attacks with an example.

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*

Each question carries 12 *marks.*

11. Explain with diagrammatic illustration the TCP/IP architecture.

Or

12. Explain packet switching and cell switching with example and diagrammatic illustration.

13. Discuss the working of the following channel access methods with an example :

    (a) Reservation. (6 marks)

    (b) Polling. (6 marks)

Or

14. Discuss the IEEE 802.3 standard for 10 Mbps LAN.

15. What is routing ? Explain distance vector routing algorithm with an example.

Or

16. Compare the features of IPV4 and IPV6.

17. What is asynchronous transfer mode (ATM) ? How ATM Works ? Discuss.

Or

18. Explain internetworking with ATM with an example.

19. What is a firewall ? List and discuss firewall design principles.

Or

20. Explain secure sockets layer transport layer security architecture with an example.

[5 × 12 = 60 marks]

F 6664 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

Eighth Semester

Branch : Electronics and Communication Engineering

EC 010 803—LIGHT WAVE COMMUNICATION (EC)

(New Scheme—2010 Admission onwards)

[Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

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

1. What is meant by Single Mode and Multimode Fibers ?
2. Differentiate between Chromatic Dispersion and Intermodal Dispersion.
3. Define Responsivity and Sensitivity of optical detector.
4. List the merits and demerits of an Optical Amplifier.
5. List the applications of Optical Network.
6. Draw the profile diagram of multimode and graded indes fibers for various profile parameters. Also write the significance of profile parameters.
7. What is intermodal dispersion ? How it is reduced in graded index fibers ?
8. Give one example of lensing scheme used to improve optical source to fiber coupling.
9. Explain gain spectrum in EDFA.
10. Explain the principle of routing in Optical Networks.

(10 × 4 = 40 marks)

Part B

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

11. With the help of diagrams, explain acceptance angle. Derive an expression for the maximum acceptance angle of a step Index Fiber. Draw proper diagram to support your derivator.

Or

12. With relevant diagrams, describe what you mean by a Graded Index Fiber. Explain with ray optics how light is guided by a Graded Index Fiber ?

13. Distinguish between Intermodal and Intramodal dispersion. Derive an expression for r.m.s. pulse width for a rectangular pulse propagating in a multimode fiber.

Or

14. What is the necessity of Optical Splicers ? With neat sketches, explain the principles of two splicing techniques.

15. (a) With the aid of diagrams, discuss the principles of operation of injection LASER.

(5 marks)

(b) Discuss the degradation mechanisms in injection LASER. Comment on these with regard to the CW lifetime of the devices.

(7 marks)

Or

16. (a) Describe with the help of diagrams, the mechanism of emission of light from an LED.

(5 marks)

(b) Explain detection process in Pn Photodiode. Compare this device with Pin Photodiode.

(7 marks)

17. Using energy band diagram, explain the mechanism for provision of stimulated emission in the Erbium Doped Silica fiber amplifier ?

Or

18. (a) Describe the operation of semiconductor LASER amplifier.

(7 marks)

(b) Explain the characteristics of MZ Optical Modulator.

(5 marks)

19. Describe a practical wavelength switching optical network. Compare its performance with wavelength routing network.

Or

20. Describe the various components in the fiber link design. How the maximum length of the link is determined ?

[5 × 12 = 60 marks]

F 6695 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

Eighth Semester

Branch : Electronics and Communication Engineering

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

(New Scheme—2010 Admission onwards)

[Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

Each question carries 3 *marks.*

1. What is a cyclic group ? Give example.
2. How a symmetric encryption algorithm works ?
3. State the difference between differential and linear cryptanalysis.
4. Outline the use of public-key cryptosystems.
5. What does intrusion detection involve ?

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*

Each question carries 5 *marks.*

6. Appraise the properties of congruences.
7. What is authentication ? Outline the two specific authentication services defined in X.800.
8. Encipher the message "help all serve all" with a rail fence of depth 2.
9. Explain with an example a public key and a private key.
10. Present an outline of statistical anomaly detection.

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*

Each full question carries 12 *marks.*

11. Illustrate with an example the Euclidean algorithm for determining the greatest common divisor of two positive integers.

Or

12. Illustrate with an example how the extended Euclidean algorithm can be adapted to find the multiplicative inverse of a polynomial.

13. What are active attacks ? Explain with an example and diagram the categories of active attacks.

Or

14. (a) What are the essential ingredients of a symmetric cipher ? Outline with an example. (6 marks)

(b) Illustrate with an example brute-force cryptanalysis of Caesar cipher. (6 marks)

15. Explain with a diagram the overall structure of data encryption standard.

Or

16. Explain with an example shift row transformation and mix column transformation with respect to advanced encryption standard.

17. Explain with an example Rivest-Shamir-Adleman (RSA) algorithm.

Or

18. What are public-key certificates ? Explain with a diagram exchange of public-key certificates.

19. Explain with a diagram the architecture for distributed intrusion detection.

Or

20. Outline the techniques used to avoid guessable passwords.

[5 × 12 = 60 marks]

F 6735 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

Eighth Semester

Branch : Electronics and Communication Engineering

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

(New Scheme—2010 Admission onwards)

[Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

Each question carries 3 *marks.*

1. Present an outline of computer based training.
2. What is satellite broadcasting ?
3. Outline the need for knowledge acquisition.
4. What is a virtual library ?
5. Name any two types of assessment used in an e-learning environment.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*

Each question carries 5 *marks.*

6. Compare e-learning and traditional learning.
7. Explain the role played by audio conferencing to e-learning.
8. Outline the issues to be addressed while developing e-content for learning.
9. Appraise the role of teachers in e-learning.
10. Outline the major challenges related to e-assessment.

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*

Each full question carries 12 *marks.*

11. Appraise the features a well-designed e-learning program can provide.

Or

12. Appraise the role played by people involved in the process of creating e-learning materials and making them available to its target audience.

13. (a) Outline the building blocks of a video conferencing system. (6 marks)

(b) Appraise with an example how video conferencing offers new possibilities to connect with guest speakers and experts.

(6 marks)

Or

14. Appraise with an example how chat, discussion forums and bulletin boards promote learning.

15. Outline with an example the following with respect to e-content : expert service, information search service and knowledge creation service.

Or

16. What is knowledge management ? Explain with a diagram the knowledge management life cycle for e-learning.

17. Outline the types of interactions in the teaching-learning process.

Or

18. Explain with an example collaborative learning and multi-channel learning.

19. Appraise the features common to tools used for developing e-content.

Or

20. Outline with an example the process of computing the cost for developing an e-learning environment.

(5 × 12 = 60 marks)