

**B.TECH. DEGREE EXAMINATION, NOVEMBER 2015****Eighth Semester**

Branch : Electronics and Communication Engineering

EC 010 801 – WIRELESS COMMUNICATION (EC)

(New Scheme – 2010 Admission onwards – Supplementary)

Time : Three Hours

Maximum : 100 Marks

**Part A***Answer all questions.**Each question carries 3 marks.*

1. Discuss the microcell zone concept.
2. What are the three basic propagation mechanisms?
3. Distinguish between fast frequency hopping system and slow frequency hopping system.
4. Distinguish between full rate speech channel and half rate speech channel.
5. Give the long code mask format for IS-95.

(5 × 3 = 15 marks)

**Part B***Answer all questions.**Each question carries 5 marks.*

6. Define Cochannel reuse ratio.
7. Discuss the time dispersion parameters.
8. Explain the various hybrid spread spectrum techniques.
9. Write short note on : (a) Inter leaving ; and (b) Ciphering.
10. Write short note on personal handy phone system.

(5 × 5 = 25 marks)

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

11. Briefly illustrate the hand off scenario at cell boundary.

*Or*

12. Discuss the concept of cellular frequency reuse.

**Turn over**

13. Explain small scale fading effect based on Doppler spread.

Or

14. Explain the impulse response model for a multipath channel.

15. Explain CDMA. Discuss its key features.

Or

16. With a neat sketch, explain the TDMA frame structure. Derive the expression for  $n$  of TDMA.

17. Discuss in detail about the signal processing in GSM.

Or

18. Explain the various GSM channel types.

19. Explain reverse IS-95 channel modulation process.

Or

20. Explain DECT functional concept.

(5 × 12 = 60 marks)

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**B.TECH. DEGREE EXAMINATION, NOVEMBER 2015**

**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. Explain cell switching technique.
2. What is the need for carrier sense multiple access ?
3. What is DHCP ? How it is different from static IP address ?
4. What is signalling in ATM ?
5. Give the applications of IP security.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain how TCP flow control works.
7. Differentiate between pure ALOHA and slotted ALOHA.
8. Give comparison between IPV4 and IPV6.
9. Explain an ATM cell header.
10. List and briefly explain five reasons for the popularity of PGP.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. (a) Compare OSI and TCP models.
- (b) Explain window adjustment in TCP.

(6 marks)

(6 marks)

Or

12. (a) Draw and explain OSI-ISO layer model. Explain the function of each layer.

Turn over

13. (a) Explain the frame formats of IEEE 802.3. (6 marks)  
(b) Explain the CSMA/CD techniques used for medium access control. (6 marks)

Or

14. Explain the features of (i) Transparent ; (ii) Source routing LAN bridges. Bring out the advantages and applications of each one.  
15. What is IP security ? Give the overview and explain the fields of IPV6 header, with neat diagrams.

Or

16. (a) Explain the distance vector routing algorithm. (6 marks)  
(b) What are the differences between virtual circuit and datagram subnets ? Explain. (6 marks)  
17. Drawing architecture of ATM protocol, explain the main features of ATM networks.

Or

18. (a) Explain ATM adaptation layer. (7 marks)  
(b) Explain the routing of a cell using a virtual switch in an ATM network. (5 marks)  
19. Describe the following NL security protocols :-  
(a) Secure Socket Layer. (4 marks)  
(b) Transport layer security. (4 marks)  
(c) IP security. (4 marks)

Or

20. (a) List out the merits and demerits of symmetric and assymmetric key encryptions. (4 marks)  
(b) Illustrate the key handling in PGP. (4 marks)  
(c) Define the terms sessions and connection in terms of SSL. (4 marks)

[5 × 12 = 60 marks]

**B.TECH. DEGREE EXAMINATION, NOVEMBER 2015****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 an additive inverse? Write all the additive inverse pairs of  $Z_7$ .
2. Explain how perfect secrecy can be achieved through one time pad.
3. What is the significance of Whitener in DES?
4. Distinguish between one way function and trap door one way function.
5. Distinguish between false positives and false negatives.

(5 × 3 = 15 marks)

**Part B***Answer all questions.**Each question carries 5 marks.*

6. What is a cyclic group? Show that the group  $G = \langle Z_6, + \rangle$  is a cyclic group with two generators,  $g = 1$  and  $g = 5$ .
7. List different types of substitution ciphers.
8. Compare the permutations in DES and AES.
9. Compare conventional encryption with public-key encryption.
10. Explain Honey-pot.

(5 × 5 = 25 marks)

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

11. Explain Euclidean algorithm.

Or

12. Prepare a Multiplication table for GF ( $2^4$ ) using  $(x^4 + x^3 + 1)$  as the modulus.

**Turn over**

13. Explain different kinds of Cryptanalysis attacks.

*Or*

14. Discuss various monoalphabetic ciphers using suitable examples.

15. (a) Compare the Key Expansion in AES 192 and AES 256.

(b) Discuss the salient features provided in the key expansion mechanism of AES.

*Or*

16. Write short notes on :

(a) Avalanche effect.

(b) Differential cryptanalysis.

(c) Blow fish.

(d) IDEA.

17. Explain the steps involved in the public key distribution of secret keys.

*Or*

18. Explain the computational aspects of RSA algorithm.

19. Explain statistical anomaly detection.

*Or*

20. Discuss password selection criteria and the various methods for its protection.

(5 × 12 = 60 marks)