

G 1185

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2016

Eighth Semester

Branch : Electronics and Communication Engineering

ADVANCED COMMUNICATION SYSTEMS (L)

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

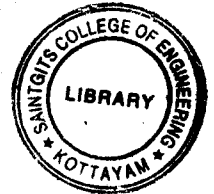
Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Explain different frequency bands used in satellite communication.
2. Explain different antenna parameters in link design.
3. Explain TDMA frame. What is the relevance of guard time in TDMA ?
4. Illustrate the communication between two earth stations using CDMA.



6. Explain the use of repeaters for range extension in cellular systems.
7. What is frequency reuse ? Why is it used in GSM ?
8. Discuss the security services offered by GSM.
9. Differentiate fast and slow hopping systems.
10. Discuss the benefits and drawbacks of spread spectrum systems.

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each full question carries 12 marks.

11. (a) Derive the expressions for orbital period and velocity. (7 marks)
- (b) Explain various aspects of non-geostationary constellations. (5 marks)

Or

12. (a) With neat diagrams, explain the functions of spacecraft subsystems. (6 marks)
- (b) Explain attitude and orbit control system. (6 marks)

Turn over

13. Explain TDMA scheme and its synchronization methods. Also describe the frame format, bits and symbols used in this method.

Or

14. Explain the operation of a CDMA system for satellite communication system. Explain its advantages and disadvantages.
15. Explain different methods of improving the capacity and coverage in cellular systems.

Or

16. (a) Explain the cochannel interference and adjacent channel interference and the methods to reduce the same.

(8 marks)

- (b) List the advantages and disadvantages of cellular systems with small cells. (4 marks)

17. (a) Explain, with neat diagrams, how a call is made between two users in a cellular system.

(8 marks)

- (b) Explain paging systems and cordless telephone systems. (4 marks)

Or

18. With neat diagrams, discuss the GSM system architecture. Also describe the TDMA frame structure in GSM.

19. (a) Explain the generation of maximum length PN sequence. List the properties of it. (6 marks)

- (b) Draw and explain the block diagram of direct sequence spread spectrum system. (6 marks)

Or

20. (a) Explain chirp spread spectrum and its application areas. (6 marks)

- (b) Discuss the various Jamming and Antijamming techniques. (6 marks)

[5 × 12 = 60 marks]

