

S.B. Roll No.....

WIRELESS & MOBILE COMMUNICATION
6th Exam/ECE/ETV/ECE-II/0761/8164/Sep'2020

Duration: 1.15 Hrs.

M.Marks:25

SECTION-A

Q1. Attempt any three questions.

3x5=15

- a. What is wireless communication? List down its advantages.
- b. Compare FDMA, CDMA & TDMA
- c. What is cell splitting?
- d. What are the causes of the co-channel radio interference?
- e. What are the different schemes of spread spectrum?
- f. Explain the concept of Handoff.
- g. Compare 3G and Wi-Fi.
- h. What is the principle of working of GPS?
- i. Explain DTH Technology.

SECTION-B

Q2. Attempt any one question.

1x10=10

- i. What is interference? Explain the types and the causes.
- ii. What is Time Division Multiple Access? Explain in detail.
- iii. Describe the architecture of GSM.
- iv. Write Short note on any two
 - a. Ricean Fading
 - b. DTH
 - c. Rayleigh Fading
 - d. Doppler Effect.

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WIRELESS AND MOBILE COMMUNICATION
6th Exam/ECE/5619/Jun'2021
(For 2018 Batch onwards)

Duration: 1.15Hrs.

M.Marks:25

SECTION-A

Q1. Attempt any three questions.

3x5=15

- i. How a geographical area is divided by different cell structures?
- ii. Draw and explain the frequency spectrum.
- iii. What are the advantages of wireless communication?
- iv. Explain the cellular concept.
- v. Why hexagonal shape of cells is preferred in cellular networks.
- vi. Explain the features of FDMA.
- vii. What are the different schemes of spread spectrum?

SECTION-B

Q2. Attempt any one question.

1x10=10

- a. Draw and explain the architecture of UMTS and its features.
- b. Explain cellular network system in detail.
- c. Explain the following propagation considerations i) Fading ii) Frequency Reuse.
- d. What is GSM technology? Explain the GSM operation and architecture in detail.

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WIRELESS AND MOBILE COMMUNICATION
6th Exam/ECE/ECE-II/ETV/0761/8164/May'19

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. Fill in the blanks.

10x1.5=15

- a. Cell _____ consists of decreasing the radii of existing cell.
- b. Wi-Fi means _____
- c. GSM is a _____ cellular network.
- d. Cells which are using same set of channels are called _____
- e. A _____ is a group of cells.
- f. TDMA stands for _____
- g. _____ has very high spectral efficiency.
- h. GPS is _____
- i. AMPS stand for _____
- j. SIM stands for _____

SECTION-B

Q2. Attempt any five questions.

5x6=30

- i. What is wireless communication? List down its advantages.
- ii. Discuss Adjacent and co-channel interference
- iii. Explain the concept of frequency Reuse.
- iv. What is Wi Fi? What are its main features?
- v. What is GPS? Give its applications.
- vi. What do you mean by spread spectrum multiple accesses? Why it is used?
- vii. What do you mean by FHSS? What is its principle and working?
- viii. Write a short note on the following.
 - a) Fading
 - b) Doppler effect.

SECTION-C

Q3. Attempt any three questions.

3x10=30

- i. Compare TDMA, CDMA and FDMA.
- ii. Write short note on any two
 - a) AMPS
 - b) Bluetooth
 - c) GPRS.
- iii. Explain cordless telephone system.
- iv. What are the various techniques to increase the coverage and capacity in cellular system?
- v. Describe the architecture of GSM network with diagram.

Roll No.

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B. Tech. 7th Semester (ECE)
Examination – December, 2014

WIRELESS COMMUNICATION

Paper : ECE-405-F

Time : Three hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all. Question No. 1 is *compulsory* and attempt *one* question from each of the four Sections. All questions carry equal marks.

1. (a) Distinguish between Fixed and Dynamic Channel Allocation. 4
- (b) What is Personal Area Network ? 3
- (c) What do you mean by SIM ? 2
- (d) What is diversity ? 4

- (e) Define Abis Interface. 4
- (f) What are the drawbacks of CSMA-CD in Wireless communication ? 3

SECTION – A

- 2. (a) What are the different technical challenges to a wireless communication system ? 10
- (b) Explain the various steps involved in placing a call from Mobile to a Landline phone. 10
- 3. (a) Explain in detail the merits and demerits of 1G, 2G, 3G generation systems & their standards. 10
- (b) Write working principle of WLL. Also write down the advantages and disadvantages of WLL. 10

SECTION – B

- 4. (a) With the help of suitable block diagram explain the operation of cellular system. 10
- (b) Compare the advantages and disadvantages of analog cellular system with digital cellular system. 10

5. (a) Explain in detail the different techniques used to improve coverage & capacity of cellular system. 10
- (b) What are the different types of Handoffs encountered in Mobile Communications ? 10

SECTION – C

6. (a) What is the difficulty of implementing CSMA/CD in a wireless environment ? 5
- (b) Compare the performance of TDMA, FDMA, CDMA, SDMA techniques. 15
7. (a) What is meant by near far effect in CDMA and explain how this effect is eliminated ? 14
- (b) What are the advantages of CDMA as compared to other Multiple Access strategies in Cellular Communication ? 6

SECTION – D

8. (a) Explain Traffic Channels (TCH) & Control Channels (CCH) in GSM. What are the different types of CCH in GSM ? 10
- (b) What is the function of VLR, HLR and AUC ?
What are services offered by GSM? 10

9. (a) Write a short on in-building communication. 10

(b) Explain forward & reverse channel parameters of IS-95 CDMA. 10

Roll No.

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B. Tech. 7th Semester (ECE)
Examination – December, 2016

WIRELESS COMMUNICATION

Paper : ECE-405-F

Time : Three Hours] [Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions. Question No. 1 is *compulsory*. Attempt *one* questions from Sections.

- | | |
|--|---|
| 1. (a) How the channels are assigned ? | 5 |
| (b) Differentiate 2G and 3G networks. | 5 |
| (c) Explain the Erlang formula. | 5 |
| (d) Define paging systems. | 5 |

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P. T. O.

SECTION – A

2. (a) Explain the evolution of mobile radio communication. 10
- (b) Explain the cordless telephone systems. 10
3. (a) Differentiate between WLL and WLAN. 10
- (b) Explain the process of making a mobile call. 10

SECTION – B

4. (a) Explain the concept of frequency reuse. 10
- (b) Discuss the different type of hand off strategies. 10
5. (a) With a block of a basic cellular system, explain its various functional modules. 10
- (b) Explain spread spectrum multiple access. 10

SECTION – C

6. (a) Discuss the measurement capacity of a cellular systems. 10
- (b) Explain different features of TDMA over FDMA. 10

7. (a) Write a short note on packet ratio. 10
- (b) Discuss the different wireless data services. 10

SECTION – D

8. (a) Discuss CDMA cellular Radio Networks. 10
- (b) Draw and explain block diagram of ISDN. 10
9. (a) Discuss different types of traffic routing used in wireless networks. 10
- (b) Discuss space division multiple access. 10

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B.Tech. 7th Semester (ECE) F-Scheme

Examination, December-2017

WIRELESS COMMUNICATION

Paper-ECE-405F

Time allowed : 3 hours]

[Maximum marks : 100

Note : Attempt five questions in all, selecting one question from each section. Q. No. 1 is compulsory.

1. (a) Give Examples of Wireless Communication systems. 5
- (b) Discuss spectrum allocation in Cellular Mobile systems. 5
- (c) Discuss FDMA 5
- (d) Discuss development of Wireless Networks. 5

Section-A

2. (a) Explain Cordless telephone systems. 10
- (b) Compare various wireless systems. 10
3. (a) Describe Bluetooth 10
- (b) Explain Personal Area Networks. 10

Section-B

4. Explain Basic cellular system; its architecture, performance criteria and operation. 20
5. Discuss about the Soft and Hard Handoff strategies in detail along with its advantages and disadvantages. 20

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[P.T.O.]

Section-C

6. (a) Explain Spread Spectrum Multiple Access. 10
(b) How we can measure capacity of a cellular system? 10
7. Explain FDMA and TDMA 20

Section-D

8. (a) Explain Traffic Routing in Wireless Networks. 10
(b) Explain Common Channel Signaling. 10
9. Write notes on any three. 7,7,6
- (a) Intelligent Cell Concept.
- (b) Advanced Intelligent Networks.
- (c) ISDN
- (d) Wireless Data Services.

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B.Tech.7th Semester (F) Scheme (ECE) Examination,

December-2018

WIRELESS COMMUNICATION

Paper-ECE-405-F

Time allowed : 3 hours]

[Maximum marks : 100

Note : Question no. 1 is compulsory. Attempt any one question from each section.

1. (i) What is PAN ? Discuss. 5
- (ii) What is frequency reuse in wireless communication ? 5
- (iii) What are the differences between hard handoff and soft handoff ? 5
- (iv) What are the applications of intelligent microcell system ? 5

Section-A

2. (a) Describe the differences between second generation and third generation. 10
- (b) Discuss the evolution of mobile radio communication system. 10
3. (a) Discuss the differences between paging system and cordless system. 10
- (b) Explain WLAN and wireless local loop. 10

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Section-B

4. (a) Explain the performance criteria of cellular mobile system 10
- (b) What are channel assignment strategies? Make the difference between fixed and dynamic channel assignment strategies: 10
5. (a) How digital cellular system is advantageous over analog cellular system ? 10
- (b) Explain tracking and grade off service. 10

Section-C

6. (a) Describe capacity of cellular system in multiple access technique. 10
- {b) What is multiple access technique? Explain TDMA in detail. 10
7. (a) Discuss spread spectrum multiple access technique. 10
- (b) What do you understand by space division multiple access ? 10

Section-D

8. (a) Explain the differences between wireless and fixed telephone network. 10

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(3)

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- (b) Discuss fixed network transmission hierarchy. 10

9. Write short notes on : 20

- (a) ISDN
- (b) Advanced Intelligent network
- (c) In-building communication

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