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53 (EC 713) WRSY

2018

**WIRELESS SYSTEMS**

Paper : EC 713

Full Marks : 100

Time : Three hours

**The figures in the margin indicate full marks for the questions.**

*Answer any five questions.*

1. (a) What is a RAKE receiver ? How it helps to increase signal to noise ratio ? Draw the block diagram of a RAKE receiver system and explain its working. 14
- (b) Compare GSM and CDMA system with different technical aspect. 6
2. (a) Name different packet radio protocols. Compare with necessary mathematical insight between ALOHA and slotted ALOHA. 14

*Contd.*

- (b) Compare different CSMA protocols. 6
3. (a) What are the benefits of Orthogonal Frequency Division Multiplexing ? 6
- (b) With mathematical derivation, explain how OFDM can be summarized into a matrix formulation. 14
4. (a) What are the challenges of mobile IP technology ? 6
- (b) Describe briefly the following terms in the context of mobile IP management :
- (i) Discovery
- (ii) Registration
- (iii) Tunnelling. 14
5. (a) Name the first wireless data standard. What is the maximum achievable data rate in CDPD ? 1+1
- (b) How CDPD was compatible with AMPS cellular system, discuss briefly ? 5
- (c) Describe with necessary diagram, different protocol structures of CDPP system. 13

6. (a) List and briefly define key requirements of a wireless LAN. 10
- (b) Name different types of WLAN technologies. Explain the strength and weakness of infrared LANs. 3+7
7. Write short notes on : **(any two)** 10×2
- (i) Spread spectrum
- (ii) ISDN
- (iii) ATM
- (iv) Medium Access Control.
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