Code No: 118FG

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, June - 2018
WIRELESS COMMUNICATIONS AND NETWORKS
(Electronics and Communication Engineering)

Time: 3 hours   **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)	Define Co-channel Interference.	[2]
b)	List out the types of small-scale multipath measurements techniques.	[3]
c)	What is meant by decision feedback equalization?	[2]
d)	Explain knife Edge Diffraction Model.	[3]
e)	Define handoff.	[2]
f)	Describe Direct Sequence Spread Spectrum.	[3]
g)	List out the three types of dedicated control channels in GSM.	[2]
h)	Give the fundamentals of equalization.	[3]
i)	What are the advantages of Wireless Local Area Networks?	[2]
j)	Write a short note on Doppler spread.	[3]

PART - B

(50 Marks)

2. Explain frequency reuse in detail. [10]

OR

3. Discuss different techniques used for improving coverage and capacity in cellular systems. [10]

4. Derive the equation of the Path loss using Two-Ray Model with neat diagrams. [10]

OR

5. Derive the Impulse response model of a Multipath channel. [10]

6.a) What is the difference between frequency selective fading and flat fading?
 b) How the received signal strength is predicted using the free space propagation Model? Explain. [5+5]

OR

7.a) Explain how the two-ray model is used when a single ground reflection dominates the multipath effect.
 b) Draw the programming model for WAP and explain its functioning. [5+5]

8.a) What is the need for link calculation? Explain with suitable example.
  b) Explain Maximum Likelihood Sequence Estimation (MLSE) Equalizer.   [5+5]

OR

9.a) Explain the algorithms for adaptive equalization.
  b) What are the different receiver diversity combining techniques? Explain.   [5+5]

10.a) Draw and explain the various fields in a IEEE 802.11 MAC frame.
  b) List and explain L2CAP logical channels.   [5+5]

OR

11.a) Write short notes on Blocking probability
  b) When does a WLAN become a personal area network (PAN)? Explain.   [5+5]

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