Code No: 128FG **R15**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, May - 2019
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)	Draw the block diagram of cellular system.	[2]
b)	Write short notes on GOS.	[3]
c)	Discuss about Brewster angle.	[2]
d)	Write a short note on signal reflections in a flat terrain.	[3]
e)	Explain Doppler shift.	[2]
f)	Discuss about slow fading.	[3]
g)	Discuss the significance of MLSE.	[2]
h)	Give the differences between linear and non-linear equalizers.	[3]
i)	Discuss the differences between the 802.11a and HIPERLAN-2.	[2]
j)	State the challenges faced by WLAN industry.	[3]

PART - B

(50 Marks)

2.a) Explain frequency reuse concept.
b) Discuss about trunking and Grade of service. [5+5]

OR

3.a) How we can improve coverage and capacity in cellular system?
b) Determine the number of cells in cluster for the following values of the shift Parameters i and j in a regular hexagon geometry pattern: (i) i=2 and j=4 (ii) i=3 and j=3. [5+5]

4.a) Discuss in detail i) The propagation in near distance ii) Long distance propagation
b) Explain knife-edge diffraction model. [5+5]

OR

5.a) Explain the phase difference between direct and reflected paths in detail.
b) Discuss about indoor propagation models in detail. [5+5]

6.a) Explain Fading effects due to multipath time delay.
b) Discuss Ricean distribution. [5+5]

OR

7.a) Explain different types of small scale fading.
b) Discuss about frequency selective fading in detail. [5+5]

8.a) Explain about time diversity and frequency diversity methods.
b) Discuss about equal gain and selection diversity techniques. [5+5]

OR

9.a) Explain in detail about non linear equalizers
b) Derive the LMS algorithm for an adaptive equalizer. [5+5]

10.a) Describe the services offered by MAC and MAC management sub layers of IEEE 802.11 wireless LAN.
b) Explain the MAC management sub layer of IEEE 802.11. [5+5]

OR

11.a) Write notes on HIPERLAN.
b) Describe WPAN. Give its main features. [5+5]

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