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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