

Code No: 128FG

R15

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, July - 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)

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|------|---|-----|
| 1.a) | What is meant by cell splitting? | [2] |
| b) | Plot the signal strength for a two level handoff scheme | [3] |
| c) | What is meant by Ray tracing? | [2] |
| d) | What is Fresnel zone geometry? | [3] |
| e) | What is Doppler spread? | [2] |
| f) | Define Coherence time. | [3] |
| g) | What is meant by Polarization diversity? | [2] |
| h) | What is the purpose of an equalizer? | [3] |
| i) | What are the advantages of WLAN? | [2] |
| j) | What is a wireless PANS? | [3] |

PART - B

(50 Marks)

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|------|---|-------|
| 2.a) | Explain handoff based on signal strength and C/I ratio. | |
| b) | Explain the concept of lowering the antenna height to decrease the co-channel interference. | [5+5] |

OR

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|------|--|-------|
| 3.a) | Discuss advantages of delayed handoffs. | |
| b) | Briefly explain about Trunking and Grade of service. | [4+6] |

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| 4.a) | Explain Free space propagation model in detail. | |
| b) | Discuss in detail about the indoor propagation using Ericsson Multiple Breakpoint Model. | [5+5] |

OR

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|----|--|------|
| 5. | Explain in detail about the Okumura Model. | [10] |
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| 6.a) | Explain impulse response model of a multipath channel. | |
| b) | Discuss about small scale multipath parameters. | [5+5] |

OR

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| 7.a) | Discuss Clarke's model for flat fading. | |
| b) | What are the different time dispersion parameters? Explain. | [5+5] |

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8.a) What are the steps in training a Generic Adaptive Equalizer? Explain.

b) Differentiate between Linear and Non-linear equalizer.

[6+4]

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9.a) With a neat block diagram explain about RAKE receiver.

b) Describe any two algorithms used for adaptive equalization.

[5+5]

10.a) What are the enhancements of IEEE 802.16? Discuss.

b) Enumerate briefly the different WLAN topologies.

[5+5]

OR

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11.a) What are the functions of 802.11 Medium Access Control Layer? Explain.

b) Discuss in detail about WLL.

[5+5]

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