Exam.Code:0931
Sub. Code: 6926

2021

B.E. (Electronics and Communication Engineering)

Seventh Semester

EC-710: Wireless and Mobile Communication

Time allowed: 3 Hours | Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Part. Use of scientific calculator is allowed.*

x-x-x

I. Attempt the following:-

(a) List advantages of CDMA. **(2)**

(b) What is interleaving? **(1)**

(c) What are control channels? **(1)**

(d) How channel coding helps in improving performance of wireless systems? **(1)**

(e) What is TDD? **(1)**

(f) What is near-far affect? **(1)**

(g) What is LTE-Advanced? **(1)**

(h) What is ISDN? **(1)**

(i) What is cell sectoring? **(1)**

Part- A

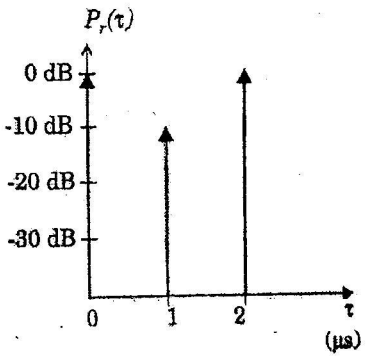
II. **(a)** Explain the effect of cluster size on the performance on cellular communication system. **(4)**

(b) Explain the features of 3G wireless networks. **(3)**

(c) For the power delay profile shown in figure:

(i) Determine the rms delay spread and mean excess delay for the channel.

(ii) If a mobile travelling at 30 km/hr receives a signal through the channel, determine the time over which the channel appears stationary. **(3)**



III. **(a)** Explain Bluetooth and personal area network technology. **(4)**

(b) Explain handoff. Explain the factors which must be taken into account before initiating handoff. **(4)**

(c) Define and explain cochannel interference. **(2)**

P.T.O.

IV. (a) Define the terms cell, footprint, cluster and frequency reuse distance and cochannel interference in a cellular system. (5)

(b) Explain UMTS cellular standard. (5)

Part-B

V. (a) Explain small scale fading. How it differs from large scale fading? What is its effect on performance of a mobile communication systems? Describe its types. (6)

(b) Compare the features of FDMA and TDMA in wireless scenario. (4)

VI. (a) Explain advantages of employing MIMO system in wireless systems? (3)

(b) Explain important differences between wireless and wired telephone networks. (3)

(c) Explain working principle of RAKE receiver with the help of its block diagram. (4)

VII. (a) What is diversity? Why is it employed in wireless channels? What is its merit over equalization? Explain various types of diversity techniques in wireless systems. (6)

(b) Describe frame structure of GSM in detail. (4)