

**B.Tech. - VIEP - ELECTRONICS AND  
COMMUNICATION ENGINEERING  
(BTECVI)**

**Term-End Examination**

00269

**December, 2017**

**BIEL-018 : WIRELESS COMMUNICATION**

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : Attempt any **five** questions. All questions carry equal marks. Missing data may be suitably assumed. Use of scientific calculator is permitted.*

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1. (a) Explain the procedure involved in the design of practical link budget using path loss model. 7
- (b) In context of large scale path loss, explain the following terms : 2+2+3
- (i) Reflection
  - (ii) Diffraction
  - (iii) Scattering

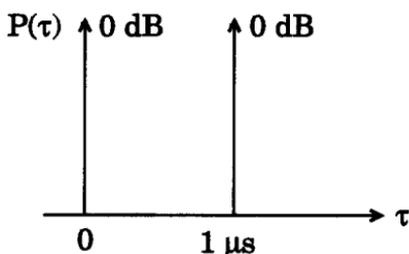
2. (a) Compare the following spread-spectrum modulation techniques : 7

(i) Direct Sequence (DS-SS)

(ii) Frequency Hopped (FH-SS)

(b) Explain various types of diversity techniques used in wireless communication systems. 7

3. (a) Compare the RMS delay spread for the following power delay profile : 7



(b) Explain the fundamentals of equalization. 7

4. (a) What are Linear Predictive Coders ? Explain their operation with suitable example. 7

(b) A receiver is located 10 km from a 50 W transmitter. The carrier frequency is 900 MHz, free propagation is assumed,  $G_t = 1$  and  $G_r = 2$ . Find

(i) Power of the receiver, and

(ii) Magnitude of E-field at the receiver antenna. 7

5. Compare and contrast the 2G and 3G wireless systems and also explain in detail, the wireless standards. 14
6. (a) What are the various channel assignment strategies ? Explain in brief. 7
- (b) What do you mean by the term Interference ? Explain its significance in improving system capacity. 7
7. Write short notes on any *two* of the following :  $2 \times 7 = 14$
- (a) TDMA
- (b) SDMA
- (c) CDMA
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