

**R16**

Code No: 135CX

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, November/December - 2018

**PRINCIPLES OF ELECTRONIC COMMUNICATIONS**

(Common to CE, EEE, CSE, EIE, IT)

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 a communication system. [2]
- b) Explain how baseband transmission is different from broad band transmission? [3]
- c) Define amplitude modulation. [2]
- d) Write the advantages of digital modulation schemes. [3]
- e) Explain the operation of a bridge. [2]
- f) Explain the operation of a NIC. [3]
- g) Define numerical aperture. [2]
- h) Draw the block diagram representing the basic elements of a fiber optic communication system. [3]
- i) What is handoff? [2]
- j) Discuss common Zigbee network topologies. [3]

**PART - B**

(50 Marks)

2. Write short notes on:
  - a) Gain
  - b) Attenuation
  - c) Decibels. [10]
- OR**
3. Why modulation is used in communication circuits? Discuss. [10]
- 4.a) Draw the block diagram of PCM system and explain.  
b) Define PWM and explain the concept of PWM using relevant waveforms. [5+5]
- OR**
- 5.a) Explain the basic principle of frequency modulation. Also explain a method to generate FM signal.  
b) Explain a method to demodulate AM signal. [5+5]
- 6.a) Explain the operation of a paging system using a block diagram.  
b) Classify computer networks and explain. [5+5]
- OR**
7. Discuss the topology, encoding and transmission media used in Ethernet LANs. [10]

- 8.a) Explain the operation of telemetry, command and control subsystems of satellite. [5+5]  
b) Explain the operation of a GPS receiver using a block diagram. [5+5]

OR

- 9.a) Draw the general block diagram of an earth station and explain. [5+5]  
b) Explain single mode step index and multimode graded index fiber optic cables. [5+5]

- 10.a) Draw the block diagram of a RFID tag and explain. [5+5]  
b) Discuss GSM system in detail. [5+5]

OR

- 11.a) Discuss the basic forms of UWB wireless and also different types of UWB modulations. [5+5]  
b) Discuss WCDMA in detail. [5+5]

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