R17

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech I Semester Examinations, January - 2018
PRINCIPLES OF ELECTRONIC COMMUNICATIONS
(Common to CN&IS, CS, CSE, EPE, EPS, IT, PE, PE&ED, SE)

Time: 3hrs   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

5 × 5 Marks = 25

1.a) Define Gain, Attenuators and Decibels. Also give their relations. [5]
  b) Compare ASK and FSK. [5]
  c) Explain how caller ID data is transmitted to the telephone. [5]
  d) Write short notes on satellite subsystems. [5]
  e) Explain about Wireless LAN. [5]

PART - B

5 × 10 Marks = 50

2. Explain in detail the electromagnetic spectrum. [10]

OR

3. What is the role of Frequency translation in modulation? Explain with examples. [10]

4.a) State how the frequency of a carrier varies in an FM system when the modulating signal amplitude and frequency change.
  b) Describe the process of de-emphasis. Where is it performed, at the transmitter or receiver and why? [5+5]

OR

5.a) Define aliasing and explain its effect in an A/D converter.
  b) Compare PAM, PWM, PCM. [5+5]

6. Describe in detail the principles of Ethernet LAN. [10]

OR

7.a) Explain briefly how a station gains access to the LAN when Ethernet is used?
  b) What are the types of cables used in LAN and explain? [5+5]

8.a) How do GPS receivers distinguish between the different satellite signals all transmitted on the same frequencies? Explain.
  b) State the effects on a satellite signal if the angle of elevation is too low. [5+5]

OR

9.a) Describe how a light source is modulated. What type of modulation is the most common?
  b) Describe the main components in an optical amplifier.   [5+5]

10.a) Describe the basic antenna structure of a typical cell site base station.
  b) Compare CDMA and WCDMA.   [5+5]

OR

11.a) Describe how interoperability is achieved with IEEE standard WLAN equipment.
  b) Explain why IEEE 802.16 is a MAN technology.   [5+5]

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