Total No. of Questions : 8]

SEAT No. :

P2691

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[5034]-301

M.Sc.

ELECTRONIC SCIENCE

EL3 UT-09 : Communication Electronics

(2013 Pattern) (Semester-III) (Credit System)

Time : 3 Hours] ***[Max. Marks : 50***

Instructions to the candidates:

1) ***Answer any Five questions.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicates full marks.***

Q1) a) Draw the block diagram of delta modulator and explain its working. **[4]**

b) Describe atmospheric and space noise in short. **[3]**

c) Write the difference between resonant and non resonant antennas. **[3]**

Q2) a) With the help of block diagram explain the working of infrared data association (IrDA) module. **[4]**

b) For amplitude modulation (AM), show that the power contained in the sidebands is one third of the total power. **[3]**

c) Explain the terms information and information theory in short. Which are the aims of the information theory. **[3]**

Q3) a) What is an antenna coupler? Describe the functions of it. **[4]**

b) Describe the ISDN address structure in short. **[3]**

c) With the help of neat diagram, explain the working of balanced modulator using diode/FET for DSBSC generation. **[3]**

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Q4) a) Describe XMODEM protocol and write the importance of it. **[4]**

b) Write the advantages and disadvantages of smart antenna's. **[3]**

c) Explain any two types of connectors used for fiber optic communication. **[3]**

Q5) a) Draw the circuit diagram of transistor RF amplifier. Explain its working in short. Write the advantages of RF amplifier. **[4]**

b) With the help of block diagram, explain the working of Frequency Shift Keying (FSK) transmitter in short. **[3]**

c) Describe sky-wave propagation of electromagnetic waves. **[3]**

Q6) a) What is 3G? Explain the 3G standards. Write the advantages and disadvantages of 3G. **[4]**

b) With the help of diagram, explain the working of varactor diode modulator. **[3]**

c) With the help of block diagram, explain the working of pulse code modulation in short. **[3]**

Q7) a) With the help of neat diagram, describe broad side array antenna and its radiation pattern. **[4]**

b) Draw the block diagram of fiber optic communication link and explain it in short. **[3]**

c) Write the phase modulated wave equation for a 25 MHz carrier is modulated by a 400 Hz audio sine wave. If the carrier voltage is 4V and the maximum deviation is 10 kHz. **[3]**

Q8) a) With the help of neat diagram, explain the working of frequency division multiplexing (FDM) in short. **[4]**

b) Draw the geometry of cassegrain fed paraboloied reflector antenna and explain its working in short. **[3]**

c) Describe any two applications of geostationary satellite in short. **[3]**

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