Total No. of Questions : 8]

SEAT No. :

P1717

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[5131]-301
M.Sc. - II
ELECTRONIC SCIENCE
EL3 UT09 : 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 indicate full marks.***

Q1) a) Write the significance of signal to noise ratio and noise figure. **[4]**

b) Describe any two types of codes used for data transmission. **[3]**

c) Draw the diagram of microwave horn antenna and explain it in short. **[3]**

Q2) a) Draw the block diagram of public switched telephone networks (PSTN) and describe it in short. **[4]**

b) With the help of block diagram, explain the working of SSB generation using filter system. **[3]**

c) With the help of neat diagram, explain the working of 8 quadrative amplitude modulator (QAM) in short. **[3]**

Q3) a) With the help of diagram, describe the sky wave propagation in short. **[4]**

b) List the types of spread spectrum (SS). Explain any one of them in short. Write the advantages of SS. **[3]**

c) With the help of block diagram, explain the working of FM receiver. **[3]**

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Q4) a) Draw the block diagram of time division multiplexing and explain it. **[4]**

b) What is resonant antennas? Write the characteristics of it. **[3]**

c) With the help of schematic diagram, explain cellulor telephone system. **[3]**

Q5) a) Draw the circuit diagram of balanced slope detector and explain its working in short. **[4]**

b) Draw the block diagram of frequency shift keying (FSK) and explain it in short. (Transmitter) **[3]**

c) Draw the diagram of cassegrain fed parabolied reflector antenna and explain its working. **[3]**

Q6) a) With the help of block diagram, explain very small aperature terminal (VSAT) earth station transmitter and receiver in short. **[4]**

b) Draw the circuit diagram of varactor diode FM generator and explain its working. **[3]**

c) Draw the block diagram of delta modulation. Explain its working in short. Write advantages and disadvantages of it. **[3]**

Q7) a) What is smart antennas? Write the advantages and disadvantages of it. **[4]**

b) With the help of block diagram, explain the fiber optic communication system. **[3]**

c) Calculate the percentage of power saving when the carrier and of the sidebands are suppressed in an AM wave modulated to a depth of 100%. **[3]**

Q8) a) Draw the block diagram of pulse code modulation (PCM). Explain the working of each block in short (Transmitter). **[4]**

b) With the help of diagram, explain the working of antenna direct coupling. **[3]**

c) Describe the 10 digit format of telephone numbering system. **[3]**