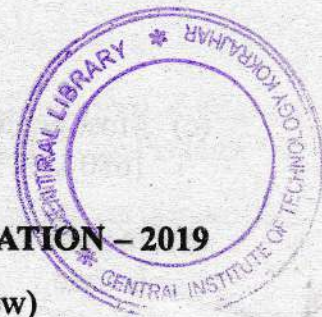


Total No. of printed pages = 6



END SEMESTER EXAMINATION – 2019

Semester : 5th (New)

Subject Code : Et-501

COMMUNICATION ENGINEERING – II

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

1. *All* questions of PART – A are compulsory.
2. Answer any *five* questions from PART – B.

PART – A

Marks – 25

1. Fill in the blanks : 1×10=10
 - (a) A PLL can also be used as _____.
 - (b) In radio receiver the AGC signal is generated in _____ stage.

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- (c) Most popular IF for receiver tuning to 540 to 1650 KHz is _____.
- (d) In servo control system _____ demodulation is used.
- (e) A phase modulated wave with phase deviation $\Delta\phi$ produces a frequency deviation Δf such that $\Delta f = \text{_____}$.
- (f) Low level modulation circuit employs circuit like _____ modulation.
- (g) Broadcast transmitters are required to transmit large _____ powers.
- (h) In digital communication, the digital signals must be made to modulate the _____ carrier.
- (i) The shape for the cellular region for maximum radio coverage is _____.
- (j) The term RADAR stands for _____.
2. Write true or false : 1×10=10
- (a) Peak detector is also called envelope detector.
- (b) Foster seeley discriminator is employed for demodulation of FM waves.



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- (c) In ASK modulator, sinusoidal signal is transmitted when the digital signal is logic 0.
- (d) The output power of AM broadcast is more than 100KW.
- (e) The buffer amplifier is to provide isolation to the master oscillator from the succeeding power amplifier stages.
- (f) FSK employs more than two different frequencies.
- (g) In a RADAR system the transmitter of the radar is more sensitive than the receiver.
- (h) Pulse radar determines the target range by measuring the round trip time of a pulsed microwave signal.
- (i) BFO is used to receive the telegraph signal.
- (j) In radio receiver noise is generally developed at IF stage.
3. Choose the correct answer : 1×5=5
- (a) For demodulation of FM signal
- (i) Envelope detector
- (ii) Diode detector
- (iii) Ratio detector
- (iv) None of the above

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(b) In Foster seeley discriminator when incoming signal frequency is greater than f_c the secondary circuit behaves as

- (i) Resistive
- (ii) Inductive
- (iii) Capacitive
- (iv) None of the above

(c) In harmonic generator if the order of harmonic is 4, then the power output as percentage of power is class C operation is

- (i) 35%
- (ii) 27%
- (iii) 25%
- (iv) 22%

(d) Radio capacity may be increased in cellular concept by

- (i) increasing in radio spectrum
- (ii) increasing the number of base stations and reusing the channels
- (iii) Both (i) and (ii)
- (iv) None of the above

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(4)

700(W)

(e) Super heterodyne principle provides selectivity at

- (i) RF
- (ii) IF
- (iii) Audio amplifier
- (iv) Before RF

PART - B

Marks - 45

4. (a) Define intelligence network ? 3

(b) Describe the GSM radio characteristics. 3

(c) Explain the process of handoff. 3

5. (a) Define ASCII code ? 2

(b) How can you get PPM from PWM ? 5

(c) What is Binary code ? 2

6. (a) What is Fading ? 3

(b) Explain space and frequency diversity reception. 3

(c) Compare AM and FM systems. 3

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(5)

Turn over

7. (a) What is pre-emphasis and de-emphasis circuits ? 3
(b) Draw the block diagram of FM transmitter and explain. 6
8. (a) Describe TDM with proper diagram. 6
(b) What are the characteristics of data transmission circuits ? 3
9. (a) What is master oscillator and why it is used in transmitter ? 2+2=4
(b) Draw the block diagram of SSB transmitter and explain function of each block. 5
10. State the advantages of a super heterodyne receiver over TRF receiver and draw the super heterodyne receiver and explain. 3+6=9
11. Explain the working principle of the RADAR system. Compare the characteristics of A- scope radar and plane position indicator (PPI) RADAR. 6+3=9