

Total No. of printed pages = 6

END SEMESTER EXAMINATION – 2022

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 :

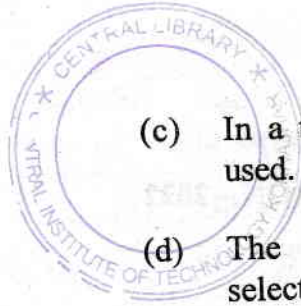
1. *All* questions of PART-A are compulsory.
2. Answer any *five* questions from PART-B.

PART – A

Marks – 25

1. Fill in the blanks with suitable words :
 $1 \times 10 = 10$
 - (a) In synchronous detector, the received signal is multiplied with _____ to recover the message.
 - (b) In the locked state of PLL, the phase error between input and output is _____.

[Turn over



(c) In a transmitter _____ oscillator is used.

(d) The superheterodyne principle provides selectivity at _____ stage.

(e) The shape for cellular region for maximum radio coverage is _____.

(f) Peak detector is also called _____ detector.

(g) Radar sets use the echo to determine the direction and distance of the _____.

(h) Two binary values are represented by different frequency in _____.

(i) PPM is _____ modulation technique.

(j) Squelch circuit is used in-between _____ and the _____ amplifier.

2. Write true or false : $1 \times 10 = 10$

(a) Quantization noise occurs in PCM.

(b) Class-A amplifier is preferable for use in low level modulation.

- (c) Morse code is a binary code.
- (d) Amplitude limiter reduces the amplitude of the received signal.
- (e) Neutralization is used in RF amplifier to improve selectivity.
- (f) Duty cycle of a radar is the ratio of pulse width to pulse repetition time.
- (g) Mixer is also known as modulator.
- (h) Non-coherent detection involves detection of carrier and then demodulation of message.
- (i) STALO stands for stable L-band output.
- (j) The 2G cellular network uses digital modulation format.

3. Specify the correct answers : 1×5=5

- (a) In NBFM, the modulation index is
 - (i) less than 1
 - (ii) greater than 1
 - (iii) None of (i) and (ii)

59/ET-501/CE-II(N)

(3)



- (b) Deemphasis circuit uses
- (i) high pass
 - (ii) low pass
 - (iii) None of (i) and (ii)
- (c) AFC stands for
- (i) Automatic frequency control
 - (ii) Automatic force control
 - (iii) Automatic fluid control
- (d) Noise generated in a resistor is known as
- (i) Partition noise
 - (ii) Thermal noise
 - (iii) Flicker noise
- (e) The number of voltage levels present in a PWM signal is
- (i) 0
 - (ii) 1
 - (iii) 2



PART – B

Marks – 45

4. (a) What is radio transmitter ? Classify its different types. 1+3=4
- (b) With the help of block diagram explain the working of AM transmitter. 5
5. (a) Distinguish between AM and FM receiver. 3
- (b) Explain briefly the different types of diversity reception utilized in communication. 6
6. (a) Compare between Foster Seely discriminator and Ratio detector used for FM detection. 3
- (b) Define the terms : (i) Noise limiter, (ii) Squelch, (iii) AFC, (iv) Tuning, (v) BFO and (vi) AGC. 6
7. (a) What is PSK ? Distinguish between PSK and FSK. 1+3=4
- (b) Draw the block diagram of binary PSK system and explain the functions of each block. 5

8. (a) Explain briefly the frequency reuse concept in cellular system. 3
- (b) Differentiate between soft and hard handoff process. 3
- (c) List some advantage of CDMA system over GSM. 3
9. (a) What is a radar system ? Why it is used ? 1+2=3
- (b) Classify the different types of radar. 3
- (c) Distinguish between coherent and non-coherent MTI radar. 3
10. Write short notes on any *three* : 3×3=9
- (a) Phase locked loop
- (b) Transit time noise
- (c) SSB receiver
- (d) Preemphasis circuit.

