

END SEMESTER / RETEST EXAMINATION-2020

(New Syllabus)

Semester - 5th

Subject Code: ET-501

COMMUNICATION ENGINEERING - II

Full Marks: 70(Part A-25 + Part B-45)

Time - Three hours

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

All questions of PART - A are compulsory.

Answer any five questions from PART - B.

PART- A

Marks - 25

1. Fill in the blanks with suitable words.

10

- a) The _____ theorem gives the minimum sampling rate in TDM system.
- b) In radio receiver the AGC signal is generated in _____ stage.
- c) PSK is used for _____ speed signalling.
- d) PWM signal can be generated by using _____ multivibrator.
- e) Synchronous detectors are basically used for detection of _____ signals.
- f) BFO is used to receive _____ signal.
- g) A pre-emphasis circuit is used before _____.
- h) The FM signals are _____ susceptible to noise.
- i) Mixer is also known as _____.
- j) RF amplifier is a tuned _____ amplifier.

2. Write TRUE or FALSE.

10

- a) The value of modulation index for over modulation is greater than 1.
- b) Limiter is not essential in Ratio detector.
- c) Bandwidth requirement for FM system is less than AM system.



- d) The two basic specification for a receiver are sensitivity and selectivity.
- e) Harmonic generator uses Class-A amplifiers.
- f) A modulator circuit is used in AM broadcast transmitter to modulate the signal.
- g) Superheterodyne receiver provides selectivity at IF stage.
- h) If the intermediate frequency is very high tracking will be improved.
- i) PAM signal is recovered by using high pass filter.
- j) PPM is a linear modulation technique.

3. Specify the correct answer.

5

- a) To separate channels in FDM receiver it is necessary to use -
 - i) AND gate
 - ii) Band pass filter
 - iii) Differentiation
- b) In a communication system, noise is most likely to affect the signal at -
 - i) At the transmitter
 - ii) In the channel
 - iii) At the destination
- c) Modulation is done at -
 - i) Receiver
 - ii) Transmitter
 - iii) Between transmitter and receiver
- d) Manmade noise are -
 - i) Amplitude variation
 - ii) Phase variation
 - iii) Frequency variation
- e) The number of voltage levels present in a PWM signal is -
 - i) 0
 - ii) 1
 - iii) 2

PART-B

Marks - 45

- 4. a) Explain briefly with block diagram the working of SSB receiver. 5
- b) Explain briefly the special features of a communication receiver. 4
- 5. What is noise? Explain the different types of noise found in communication receiver. 2+7 = 9
- 6. a) Write down the different types of AM and FM detector. 4



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| b) Draw the circuit diagram of a Foster Seely discriminator and explain the principle of operation. | 5 |
| 7. a) What is GSM? Explain briefly the GSM architecture with suitable diagram. | 1+5 = 6 |
| b) List some services of GSM. | 3 |
| 8. a) With the help of diagram explain the working of MTI radar. | 6 |
| b) List some applications of MTI radar. | 3 |
| 9. a) What are the different digital modulation techniques? | 2 |
| b) State the advantage of digital transmission. | 3 |
| c) Write what you know about FSK and PSK. | 4 |
| 10. Write short notes on any three. | 3x3 = 9 |
| a) PWM and PPM | b) AGC. |
| c) Binary and ASCII codes. | d) PCM. |
