

EC505

SEAT NO:-----

GANPAT UNIVERSITY

B. Tech. Semester V (Electronics and Communication Engg.)

Regular Examination, Nov Dec 2011

Communication Systems (EC 505)

Max. Time: 3Hrs.]

[Max. Marks: 70

Instructions:

1. Attempt all questions.
2. Answers to the two sections must be written in separate answer books.
3. Figures to the right indicate full marks.
4. Assume suitable data, if necessary.
5. Question number Three & six are compulsory.

SECTION I

- 1 (A) Two dices are thrown simultaneously. Find the probability of getting a 5. 4
- (B) Draw the suitable diagram and explain LC filters. 8
- OR
- 1 (A) What do you mean by random process? Explain in complete detail. 6
- (B) Draw the diagram and explain self capacitance of coil. 6
- 2 Write short notes on: 11
- A Q factor
- B Noise factor
- OR
- 2 Write short notes on: 11
- A Deterministic signals and random signals
- B Optimum filtering in random process
- 3 (A) A box containing 5 white, 3 red and 2 black balls. Three balls are drawn in succession. Find the probability that ball will of different colours. 7
- (B) Define Noise. What do you meant by Flicker noise? 5

## SECTION-II

- 4 (A) Explain super heterodyne receiver with the help of block diagram 6  
 (B) Why AGC is necessary? Draw and explain simple AGC circuit. 4  
 (C) Give briefing regarding tuning range. 2
- OR
- 4 (A) Define modulation Index. Explain over, under and 100% modulation with waveforms. 4  
 (B) A receiver tunes signals from 550 KHz to 1600 KHz with an IF of 455 KHz. Find frequency tuning ranges and capacitive tuning ranges for oscillator section and for the RF section. 4  
 (C) What is satellite? Explain transponders. 4
- 5 (A) List out methods for SSB generation, Explain "phasing method" with block diagram. 6  
 (B) A modulating signal consists of a symmetrical triangular wave having zero dc component and peak to peak voltage of 11volts. It is used to amplitude modulate a carrier of peak voltage of 10 volts. Calculate the modulation index and the ratio of the side lengths  $L1/L2$  of the corresponding trapezoidal pattern. 5
- OR
- 5 (A) How FM can be obtained from PM.? 5  
 (B) Explain Foster seeley Discriminator as far as angle modulation detectors are concerned. 6
- 6 (A) Define following terms in satellite communication. 3  
 1) Geostationary orbit  
 2) Apogee  
 3) Perigee  
 (B) Explain in brief: Tracking, tracking error and types of tracking. 4  
 (C) Explain FET singly balanced modulator with help of diagram. 5

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END OF PAPER