

C 62962

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Name.....

Reg. No.....



**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE
[SUPPLEMENTARY] EXAMINATION, APRIL 2014**

(2009 Scheme)

EE/PTEE 09 702 – ANALOG AND DIGITAL COMMUNICATION

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all the questions.

Each question carries 2 marks.

1. Define modulation index of Amplitude modulation.
2. Define and explain Ergodicity.
3. What is a Random process? What is a Random variable?
4. What is the purpose of power line carrier communication?
5. What is meant by packet switching?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

Each question carries 5 marks.

6. Write short note on pre-emphasis and de-emphasis. Where it is used?
7. For a random process, define and explain ergodic in mean and ergodic in auto correlation function.
8. What is delta modulation? How it is implemented?
9. Draw and explain JFET reactance modulator.
10. What is the principle of ASK? Explain.
11. What is meant by line trap? Explain a simple implementation of line trap in power line carrier communication.

(4 × 5 = 20 marks)

Part C

Answer any four full questions.

Each question carries 10 marks.

Missing data may suitably be assumed.

12. (a) With a neat block diagram, explain the working of a Super heterodyne receiver. Explain the functions of each block.

Or

Turn over

(b) With the help of a diagram and wave-forms, explain the concept of high level amplitude modulation.

13. (a) Write notes on power spectral density. Write the properties of power spectral density.

Or

(b) State and prove Winer-Khintchine Einsteine theorem.

14. (a) Explain CDMA system in detail.

Or

(b) Define and describe pulse position modulation and explain with waveform how it is derived from PWM.

15. (a) What are the essential components required in power line carrier communication. Explain the functions of each component.

Or

(b) What are the communication standards to be used in power line communication.

(c) Explain the concept of Digital PLCC.

(6 + 4 = 10 marks)

[4 × 10 = 40 marks]