

**D 51542**



Name.....

Reg. No.....

**FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, DECEMBER 2008**

**EC 2K 503 / PTEC 2K 502 – ANALOG COMMUNICATION**

**Time : Three Hours**

**Maximum : 100 Marks**

- I.** (a) State Wiener-Khinchin theorem.  
(b) Define stationarity. Write its types.  
(c) Define noise. What are the types of noise?  
(d) Define Noise figure. Write its significance.  
(e) Differentiate AM from FM.  
(f) Draw a neat block diagram of TRF receiver. State its demerits.  
(g) State the advantages of FM.  
(h) What is threshold effect? Explain.

(8 × 5 = 40 marks)

- II.** (a) (i) Explain the correlation theory for WSS random process.  
(ii) What are continuous and discrete random variables? Explain. Give examples.

*Or*

- (b) State and prove Wiener-Khinchine relation.

- III.** (a) Write a detailed note on noise sources.

*Or*

- (b) Derive an expression for noise figure for cascaded amplifiers. Explain the steps.

- IV.** (a) Draw a neat block diagram of superheterodyne receiver. Explain its principle of operation, merits and demerits.

*Or*

- (b) Draw neat block diagrams for AM transmitter and AM receiver. Explain their principle of operation.

- V.** (a) Explain any *two* indirect methods of generation of FM signals with neat sketches.

*Or*

- (b) Write technical notes on:

1. Angle modulation.
2. Noise in FM reception.

(4 × 15 = 60 marks)