

C 63001

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Name.....

Reg. No.....



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

(2009 Scheme)

AI 09 703—ELECTRONIC COMMUNICATION SYSTEMS

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

1. Define Modulation Index.
2. Define selectivity and fidelity of a receiver.
3. State sampling theorem.
4. Define Signal-to-Noise Ratio.
5. What is Telemetry ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. What are the needs for modulation ? Explain.
7. Briefly explain transmission line and its parameters.
8. Explain the generation and detection of PAM wave.
9. With circuit diagram, explain simple AGC and Delayed AGC.
10. Explain TDM and FDM.
11. Prove that for a hexagonal geometry, the co-channel reuse ratio is given by $Q = (3N)^{1/2}$, where $N = i^2 + ij + j^2$.

(4 × 5 = 20 marks)

Part C

12. Derive an expression of Amplitude Modulated Wave and its power relation.

Or

13. Derive an expression for the Narrowband Frequency Modulated Wave.
14. With block diagram, explain the operation of a Super Heterodyne receiver.

Or

15. With block diagram, explain any *one* method of SSB generation and its advantages over DSB-FC and DSB-SC.

Turn over

16. With phase constellation diagram explain PSK.

Or

17. What are slope overload noise and granular noise ? Explain them and its reduction techniques.

18. With block diagram, explain the satellite transponder.

Or

19. With block diagram, explain the Optical fiber communication.

(4 × 10 = 40 marks)