

G 1563

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2016**

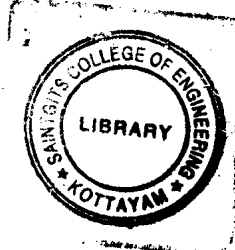
**Fourth Semester**

Branch : Applied Electronics and Instrumentation Engineering

AI 010 405—SIGNAL COMMUNICATION (AI)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]



Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. What are the primary components of an electronic communication system ?
2. Define electrical noise.
3. State and explain sampling theorem.
4. What are the advantages of using optical fibers in telecommunication ?
5. What is a passive satellite ?

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Describe reasons why modulation is required in electronic communication system.
7. List several sources of external noise and give a brief description of each.
8. Define modulation coefficient and percentage modulation.
9. Define critical angle.
10. What are the advantages of a geostationary satellite.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. (a) What are the two basic types of electronic communication system ?  
(b) Write the advantages and disadvantages of digital communication systems.

Or

Turn over

12. Explain the signal transmission over wires using voltage, current and frequency.
13. Explain the following terms in detail :
- (a) Noise spectrum.
  - (b) Noise figure.
  - (c) Noise temperature.

*Or*

14. Explain in detail about grounding and shielding techniques.
15. Explain the generation of PPM and PWM signals.

*Or*

16. What are the advantages and disadvantages of digital modulation ?
17. (a) What are the acceptance angle and acceptance core ?  
(b) Define numerical aperture.

*Or*

18. Write technical notes on :
- (a) Single mode and multimode fibers.
  - (b) Channel multiplexing.
19. Describe with neat block diagram a satellite uplink model.

*Or*

20. Explain in detail why most commercial satellites are geostationary.

(5 × 12 = 60 marks)

