

**IV B.Tech I Semester Supplementary Examinations, April/May 2005**  
**AVIONICS**  
**(Aeronautical Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. What is understood by the term Avionics? What types of avionic systems are installed in a modern maritime naval airplane? Name four such systems and describe each of these with sketches and plots. Provide details of the utility of each system.
2. What is the necessity of a uniform set of specifications for the transfer of digital data between aircraft electronics system. Hence describe the two-way AIRLINK 629.
3. Consider flight deck of a modern airplane. Describe basic instruments and communication systems placed on the deck. What is the requirement of various control devices used on the flight deck? Hence describe a zener diode and a bidirectional zener diode.
4. Write notes on:
  - (a) Radar electronics warfare and
  - (b) Reliability, Maintainability and certification of avionics systems and components.
5. Explain the term Doppler effect and its physics. How was this adopted for the aviation purposes? Describe the basics and application of Doppler aerials and Janus aerial.
6. How is the Instrument Landing System useful to the pilot at the time of the landing of the airplane? Describe its components both the ground based and airborne, in details with sketches and plots. Explain the functioning of each component.
7. What are different components a radio Compass. Describe its functioning. Explain the uses of Radio Compass.
8. Describe the principles of a hyperbolic navigation system. Hence describe LORAN C system. What is the range of frequencies of this system.

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