Code No: 37157/37158 **R05** **Set No - 1**

IV B.Tech I Semester Regular Examinations,Nov/Dec 2009
AVIONICS
Aeronautical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) What is a "GYROSCOPE"? Explain its properties.
   (b) Explain state-of-art "RING LASER GYRO(RLG) used by INS. [8+8]
2. (a) What are the 5 sub-assemblies of HUD? Briefly explain.
   (b) Draw a schematic diagram of HUD (Head -Up Display) unit and explain the functioning of HUD as a Flight Deck Display Device. [8+8]
3. (a) Listout various types of "Navigational Instrumentation Display" in the Flight Deck.
   (b) Comprehensive airborne Instrument in the Cock-pit is called "Flight Director" system. Explain its details. [8+8]
4. List various hyperbolic navigation systems. Explain the principle and operation of LORAN-C. [4+12]
5. (a) What is the concept of Hijack, Emergency, Distress and Search & Rescue as applicable to Aeronautical applications?
   (b) How the above concept can be implemented using R/T set, SSR, SAT-NAV and Emergency Locator Beacon fitted on the aeroplane. [8+8]
6. (a) Explain the methodology of Enhancement of "Positional Accuracy" of GPS RX.
   (b) How the accuracy can be improved to 10-20 meters using Differential GPS(DGPS)? [8+8]
7. Explain the line-of-sight and sky waves. How the propagation and noise characteristics of line-of-sight waves differ from sky waves? [4+4+8]
8. How various software development methodologies have affected the performance and capability of the modern avionic systems? Explain. [16]

⋆ ⋆ ⋆ ⋆ ⋆