Code No: R05422101 **R05** **Set No. 3**

IV B.TECH II SEM – REGULAR / SUPPLEMENTARY EXAMINATIONS MAY -2010

AIRCRAFT SYSTEMS AND INSTRUMENTS
Aeronautical Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Give a brief account on non-absorbing landing gear.
   (b) Discuss about the three types of non-absorbing landing gears. [8+8]
2. (a) With the help of a schematic arrangement explain how a Digital Air Data Computer (ADC) works in the aircraft.
   (b) Describe the Auto-pilot system in detail. [8+8]
3. (a) Explain the functioning of a 28 volt aircraft starter-generator. [8]
   (b) Explain how voltage regulation is achieved in a carbon pile voltage regulator. [8]
4. (a) Explain different modes of operation of hydraulic controllers.
   (b) How can power be activated in aircraft engines? [8+8]
5. (a) Draw the diagram of a vapour cycle cooling system and explain.
   (b) How does a basic air cycle system differs from vapour cycle cooling system? [8+8]
6. (a) What is the difference between 'Basic Six' and 'Basic seven' of flight instrument grouping?
   (b) Explain briefly 'flight director system indicator'. [8+8]
7. Write short notes on the following: [4 × 4]
   (a) Engine speed indicators
   (b) Capacitance type fuel quantity indicators
   (c) Synchroscope
   (d) Oil temperature indicators.
8. (a) What is meant by Fuel sediments? [6]
   (b) Explain various quality check tests to be carried out on Aviation fuel. [10]

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