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2005 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS
FUNDAMENTALS OF AERONAUTICAL ENGINEERING
(AERONAUTCAL ENGINEERING)

NOVEMBER 2005

TIME – 3 HOUR
MARK - 80

Answer any FIVE Questions
All Questions carry equal marks

1. Describe the various parts of the standard atmosphere, What is Lapse rate and how does it affect the temperature and pressure in the atmosphere. [16]

2. On a certain day the pressure at sea level is 101500 N/m2 and the temperature is 25oC. The temperature is found to fall linearly with the height to -50oC at 11 Km above this, it remains constant. Calculate the pressure, density and coefficient of viscosity at 15000m and 12000m. [16]

3. Describe the functioning of manual, powered and power assisted controls of an aircraft. [16]

4. (a) What is a hovercraft, describe its functioning.

(b) What is STOL/VTOL . [8+8]

5. What type of construction is used for helicopter rotor blades. [16]

6. Describe the construction of turbo jet and turbo prop engine. Compare the performance characteristics of the both. [16]

7. Write short note on the following:

(a) Turbo fan engine

(b) Early air planes

(c) Gyroscope & navigation. [5+5+6]

8. Draw a line diagram of the electrical system for a typical aircraft and explain its working. [16]