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Paper Id: **148608**

Sub Code: NAE 601

Roll No: XXXXXXXXXX

B TECH
(SEM-VI) THEORY EXAMINATION 2017-18
AIRCRAFT INSTRUMENTS

Time: 3 Hours

Total Marks: 100

- Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.
2. Any special paper specific instruction.

SECTION- A

1. Attempt all Parts. All parts carry equal marks. (2x10 = 20)

- a. Write the basic component of fiber optic cable.
- b. What are the basic parts of ECAS?
- c. Write the function of instruction register.
- d. Name the instruments used in basic T type layout in cockpit.
- e. Define random access memory.
- f. Briefly write about glass cockpit in aircraft.
- g. Name the segments and frequencies used in GPS.
- h. Write the use of inverter in digital system.
- i. Name ARINC used in aircraft digital system.
- j. Briefly write effect of HERF in aircraft.

SECTION- B

2. Attempt any five questions from this section. (10x5 = 50)

- a. Name the different types of D/A converter also explain the working of binary weighted D/A converter with diagram.
- b. Determine the total number of possible input combination of a 4-input OR gate also draw the logic symbol and develop a truth table.
- c. With neat diagram, explain function of EADI.
- d. Define the decoder; explain working principle of 2 to 4 bit decoder with neat diagram.

- e. How is the EMI affecting digital data in aircraft, write the process to minimize it.
- f. Write the name of display systems used in aircraft also explain function of CRT.
- g. Explain the internal architecture of basic 8-bit microprocessor with diagram.
- h. Write the advantage and disadvantage of fiber optic cable over electrical wire.

SECTION- C

Note- Attempt any two questions from this section.

(15x2 = 30)

- 3. Explain the function of fly by wire system in advance aircraft and its advantage.
- 4. Write the principle of operation of GPS with its segments.
- 5. Write the name of basic logic gates, draw the logic symbol, truth table and explain the used of logic gates in aircraft.