

Printed Pages: 02

Paper Id: 148231

Sub Code: NAE601/EAE601

Roll No.

B TECH

(SEM-VI) THEORY EXAMINATION 2018-19

AIRCRAFT INSTRUMENTATION

Time: 3 Hours

Total Marks: 100

Note: Attempt all Sections. If require any missing data; then choose suitably.

Q1. Attempt any TWO parts:

10x2=20

- a) What do you understand by GLASS COCKPIT? With the help of a labeled sketch show the instruments locations in a cockpit of modern aircraft.
- b) Write hexadecimal numbers (0 through F) and their equivalents in decimal, binary, and octal in a tabular form.
- c) Write short notes on Analog to Digital converters and Digital to Analog converters

Q2. Attempt any two parts:

10x2=20

- a) Draw the symbols and truth tables for the following LOGIC GATES
 - i. EXCLUSIVE –OR
 - ii. OR
 - iii. AND
 - iv. NOT
 - v. Make a NOR gate using OR and NOT gates.
- b) Draw a basic practical data bus system used in aircraft and show its following components.
 - i. Avionic LRU
 - ii. Serial Data Bus
 - iii. Bus interface
 - iv. Parallel Data bus
 - v. Bus Coupler
- c) In short explain the following terms in reference to aircraft data bus.
 - i. ARINC 429
 - ii. Clock
 - iii. Unidirectional Bus
 - iv. Protocol
 - v. Multiplexing

Q-3

Attempt any TWO parts:

10x2=20

- a) With the help of diagrams briefly explain the function and importance of CONE OF ACCEPTANCE, CLADDING and CORE in fiber optics.
- b) With examples discuss the manner which you will consider for classification /grouping of integrated circuits..What are advantages and problems associated in using ICs in aircraft?
- c) Describe briefly the working of microprocessor based computer system used in aircrafts. Label the components of the basic system.

Q4. Attempt any ONE part:

20x1= 20

- a) What types of electronic displays are used in aircrafts? Using labeled diagram describe the working of any one type.
- b) What do you understand by ELECTRO SENSITIVE DEVICES? Why and what precautions will you take for protecting ELECTRO SENSITIVE DEVICES from damage while working on them.

Q5. Attempt any two parts:

10x2= 20

- a) Why EMC is important in aircrafts. With the help of diagrams explain the various coupling modes in EMI.
- b) What is GPS? Using diagrams, explain the working of space segment of GPS.
- c) Briefly describe Inertial Reference System (IRS)