

Registration No:

--	--	--	--	--	--	--	--	--	--

Total Number of Pages: 02

B.Tech
PAE31001

3rd Semester Regular Examination 2017-18

AVIONICS

BRANCH: AERO

Time: 3 Hours

Max Marks: 100

Q.CODE: B1107

**Answer Question No.1 and 2 which are compulsory and any four from the rest.
The figures in the right hand margin indicate marks.**

Q1 Answer the following questions: *multiple type or dash fill up type* (2 x 10)

- a) MIL-STD-1553 is a standard which defines the _____ and _____ characteristics for a data bus.
- b) The bus controller is responsible for directing the flow of _____ on the bus.
- c) The first three-bit times of all word types is called the _____ field.
- d) New airplane designs in the twenty-first century continue to employ the _____ bus for data transmission.
- e) The _____ finds its primary implementations in the smaller business and private general aviation (GA) aircraft but has also been used in retrofits of some commercial transport aircraft.
- f) Asynchronous is operating at a speed determined by the circuit functions rather than by timing signals. [True/False]
- g) Dispatchability and maintainability are not supported by longer and controllable maintenance intervals and simplified diagnostics. [True/False]
- h) A TDMA round is divided into _____ with flexible length.
 - a) Slots,
 - b) Slats,
 - c) Shots
 - d) Sheets
- i) This layer defines the format of TTP protocol frames with header,
 - a) status,
 - b) data,
 - c) CRC information
 - d) All of the above.
- j) A set of replica-determinate nodes is known as _____.
 - a) FCR
 - b) FTU
 - c) LRM
 - d) LRU

Q2 Answer the following questions: *Short answer type* (2 x 10)

- a) List recent advancements in Avionic systems
- b) Define EIS

- c) Explain UHF communication systems
 - d) Write short note on ILS?
 - e) Write a short note on GPS?
 - f) List the advantages of Localizer?
 - g) Write short note on FBW?
 - h) Write a short note on FDS?
 - i) Write short note on FMS?
 - j) Write short note on position Accuracy
- Q3** a) List evolution of Avionics Architecture starting from first generation to fourth generation. **(10)**
b) With a neat diagram explain the integration of different avionics systems. **(5)**
- Q4** a) Compare and contrast display technologies CRT, LED,LCD,EL and plasma panel. **(10)**
b) Explain in detail about audio transmitter and receiver **(5)**
- Q5** a) Explain the Architecture and protocols of MIL-STD-1553 data bus? **(10)**
b) Explain ARINC 429 data bus in detail? **(5)**
- Q6** a) Explain few integrated avionics systems and weapon systems. **(10)**
b) Define GPS. Explain working of it with codes of communication used for locating the object? **(5)**
- Q7** a) Explain briefly about FBW technologies and its silent features. **(10)**
b) Fly by light technologies. **(5)**
- Q8** a) Explain clearly top down design procedure that is adopted in avionics system design. **(10)**
b) Draw and Explain the theory of Longitudinal Autopilot. **(5)**
- Q9** a) Explain design and technologies involved in avionic system and standards used for it. **(10)**
b) Explain certification and explain various steps involved in certification of avionic system. **(5)**