

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
Sixth semester B.Tech degree examinations (S), September 2020

**Course Code: AO306**

**Course Name: Avionics and control system**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any three full questions, each carries 10 marks.*

- |   |  | Marks |
|---|--|-------|
| 1 | a) What is mean by integrated modular avionics? Explain. | (5)   |
|   | b) Explain the types of navigation systems.              | (5)   |
| 2 | a) What are the types of memories? Explain in detail.    | (8)   |
|   | b) Define fly-by-wire FCS?                               | (2)   |
| 3 | Explain the data bus MIL-STD 1553B.                      | (10)  |
| 4 | Explain in detail about ARINC 629.                       | (10)  |

**PART B**

*Answer any three full questions, each carries 10 marks.*

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|---|---|------|
| 5 | a) Write a note on Synthetic vision systems.                | (5)  |
|   | b) Briefly explain DVI.                                     | (5)  |
| 6 | Describe about situation awareness in aircraft.             | (10) |
| 7 | Explain the working principle of global positioning system. | (10) |
| 8 | Explain the operation of LORAN and MLS.                     | (10) |

**PART C**

*Answer any four full questions, each carries 10 marks.*

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|----|--|------|
| 9  | Define and explain the following parameters.<br>Altitude, Air speed, Vertical speed and Mach Number. | (10) |
| 10 | Describe in detail about Mach warning and Altitude warning systems in an aircraft.                   | (10) |
| 11 | Explain longitudinal and lateral autopilots in an aircraft.  | (10) |
| 12 | What are the types of Fiber optic cables? Explain their characteristics.                             | (10) |
| 13 | Explain IEEE STD 1393.   | (10) |
| 14 | a) What is Sagnac effect?  | (2)  |
|    | b) Write a note on Fiber optic gyro.   | (8)  |