

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2022

Subject Code:3140111**Date:06-07-2022****Subject Name:Avionics****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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| Q.1 | (a) | Explain role of Avionics in air navigation. | 3 |
| | (b) | Explain avionics architecture with an example. | 4 |
| | (c) | Enlist avionics systems and their applications in civil and military aircrafts? | 7 |
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| Q.2 | (a) | Explain function of VOR navigation instrument. | 3 |
| | (b) | Explain Doppler VOR. Compare it with conventional VOR? | 4 |
| | (c) | Explain various applications of DME for air navigation. Explain DME saturation. | 7 |
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| OR | | | |
| | (c) | Explain ILS with map of azimuth and elevation. | 7 |
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| Q.3 | (a) | Differentiate between Primary Ground Radar and SSR. | 3 |
| | (b) | Explain principle and application of Radio Altimeter. How is it different than pressure altimeter? | 4 |
| | (c) | Explain function of GPWS with block diagram. | 7 |
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| OR | | | |
| Q.3 | (a) | Shortly explain Doppler effect. Explain application of any equipment work on Doppler principle. | 3 |
| | (b) | Explain various applications of Airborne weather radar. | 4 |
| | (c) | Briefly explain function of TCAS. What is major difference between TCAS-1 and TCAS-2? | 7 |
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| Q.4 | (a) | Write applications of GPS in air navigation. | 3 |
| | (b) | Differentiate between GPS and IRNSS with respect to air navigation. | 4 |
| | (c) | What is application of Airborne Early Warning and Control System as an electronic warfare? | 7 |
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| OR | | | |
| Q.4 | (a) | Shortly explain advantages of Electronic Flight Instrument System over mechanical gauges. | 3 |
| | (b) | Explain roll of Flight Director System on EFIS. | 4 |
| | (c) | What are advantages of using Flight Management System? | 7 |
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| Q.5 | (a) | Explain Flight Data Recorder and Cockpit Voice Recorder with respect to function. | 3 |

- (b) Explain role of Black Box after air crash. **4**
- (c) What is function of Emergency Locator Transmitter? How does an airborne pilot find crash site? **7**

OR

- Q.5** (a) Differentiate between Double Side Band and Single Side band modulation. **3**
- (b) Explain usage of Selective Calling System in radio communication. **4**
- (c) Briefly explain basic functions of autopilot system. **7**
