

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023

Subject Code:3140111**Date:21-07-2023****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) | What is the importance of Avionics systems to conduct air navigation? | 03 |
| | (b) | What is Avionics architecture? Explain any one with example. | 04 |
| | (c) | Enlist avionics systems used for successful operation of air equipments. Shortly explain their application in one sentence for each. | 07 |
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| Q.2 | (a) | Explain function of VHF Omni Range Navigation system. | 03 |
| | (b) | Explain Doppler VOR. Shortly explain Doppler effect. | 04 |
| | (c) | What is DME? What is its application with VOR and ILS glide slope transmitter? | 07 |
| OR | | | |
| | (c) | With neat sketch explain ILS navigation aid. Explain application of each component of ILS. | 07 |
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| Q.3 | (a) | Differentiate between Primary Radar and Secondary Radar. | 03 |
| | (b) | Discuss error of Radio Altimeter. Why is it not effective while aircraft is flying at low level on water surface? | 04 |
| | (c) | Explain role of radio altimeter for Ground Proximity Warning System. | 07 |
| OR | | | |
| Q.3 | (a) | Shortly explain application of Doppler Radar in aviation industry. | 03 |
| | (b) | How does Airborne Weather Radar Work? Explain Mapping mode of AWR. | 04 |
| | (c) | Shortly explain how does a pilot prevent head on collision using Traffic Collision Avoidance System? | 07 |
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| Q.4 | (a) | Enlist advantages of GPS navigation over VOR navigation. | 03 |
| | (b) | Differentiate between GPS and IRNSS with respect to air navigation. | 04 |
| | (c) | Explain importance of Airborne Early Warning and Control System? What is disadvantage of this system? | 07 |
| OR | | | |
| Q.4 | (a) | Define EFIS. | 03 |
| | (b) | Shortly explain Flight Director system. | 04 |
| | (c) | Explain what type of information can be stored with Flight Management System? | 07 |
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| Q.5 | (a) | Shortly explain function of black box. | 03 |
| | (b) | Explain function of flight data recorder. | 04 |
| | (c) | What are functions of ELT? | 07 |

OR

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| Q.5 | (a) | Explain applications of DSB and SSB in Aviation. | 03 |
| | (b) | Explain how SELCAL works. | 04 |
| | (c) | Briefly explain various functions of Autopilot systems. | 07 |
