

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160114****Date:08/06/2022****Subject Name:Introduction to UAV****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 do you mean by UAV? Explain | 03 |
| | (b) Write an application of UAV. | 04 |
| | (c) Write a Characteristics of Multi rotor vehicle and fixed wing vehicle. | 07 |
| Q.2 | (a) List out control methods. Discuss Stabilized control | 03 |
| | (b) Write a Characteristics of Flapping wing vehicle. | 04 |
| | (c) List out different types of pay loads for UAV and explain properly. | 07 |
| OR | | |
| | (c) Explain Hyper spectral sensors. | 07 |
| Q.3 | (a) Discuss Laser detection. | 03 |
| | (b) Explain Synthetic aperture radar. | 04 |
| | (c) What do you understand by Delivery payloads? Discuss | 07 |
| OR | | |
| Q.3 | (a) Discuss Radio navigation. | 03 |
| | (b) Explain procedure of vertical takeoff and landing for UAV. | 04 |
| | (c) Write a short note on UAV Launch methods. | 07 |
| Q.4 | (a) Explain Telemetry. | 03 |
| | (b) List out different types of Guidance system in UAV | 04 |
| | (c) Discuss Dijkstra's Algorithm. | 07 |
| OR | | |
| Q.4 | (a) Define Navigation. | 03 |
| | (b) Explain in short "Dead Reckoning". | 04 |
| | (c) Explain Ground control station in UAV | 07 |
| Q.5 | (a) Classify UAV based on Range and Endurance. | 03 |
| | (b) What is the difference between Small UAV and Medium UAV? | 04 |
| | (c) Explain Communication systems in UAV | 07 |
| OR | | |
| Q.5 | (a) Discuss UAV Component testing in short. | 03 |
| | (b) Explain Catapult Launch System Tests. | 04 |
| | (c) Write a note on Very small UAVs with appropriate sketch. | 07 |
