

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022

Subject Code:3160114

Date:16-12-2022

Subject Name:Introduction to UAV

Time:02:30 PM TO 05:00 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

Q.1 (a) What are basic differences between general aviation aircrafts and UAVs? **03**

(b) Shortly describe history of UAV. **04**

(c) What are differences between flapping wing and rotary wing UAVs? **07**

Q.2 (a) Define “Delivery Payload”. **03**

(b) Explain function of any two types of sensors used in UAVs. **04**

(c) Briefly classify the payloads. **07**

OR

(c) Explain function of Hyper Spectral Sensor. **07**

Q.3 (a) Shortly explain function of Thermal Camera. **03**

(b) What is basic difference between Radar and Laser detection and range. **04**

(c) Shortly Explain application of Synthetic aperture radar. **07**

OR

Q.3 (a) What are disadvantage of catapult launching system of UAV? **03**

(b) What are differences between launching techniques launching methods of VTOL UAVs and Conventional UAVs? **04**

(c) Briefly explain function of Inertial Navigation System of UAV. **07**

Q.4 (a) Define Way Point Navigation. **03**

- (b) What is the basic difference between expandable and non expandable UAVs? 04
- (c) Briefly explain testing methods of UAVs. 07

OR

- Q.4** (a) What is the application of Ultrasonic detector? 03
- (b) Differentiate between primary and secondary radar. 04
- (c) Briefly explain Dead Reckoning Navigation. 07
- Q.5** (a) Define “Recreational Payloads” of UAV. 03
- (b) Differentiate between small and large UAVs. 04
- (c) Briefly explain control system of Quadcopters. 07

OR

- Q.5** (a) Draw any one type of UAV with nomenclature. 03
- (b) What are basic differences between UAVs and UCAVs? 04
- (c) Briefly explain applications of UAVs in defense operations. 07
