REV-01
BBT/01/05

2023/06

SET A

B.Sc. PHYSICS
SECOND SEMESTER
PHYSICS OF DRONE PILOTING
SVS – 202

[USE OMR FOR OBJECTIVE PART]

Duration: 1.30 hrs. Full Marks: 35

Objective

Time: 15 min. Marks: 10

Choose the correct answer from the following: ***1×10=10***

1. Gyroscope is used for?
   a. Maintaining orientation of drone
   b. Maintaining angular velocity of drone
   c. Both (a) and (b)
   d. Only (a)

2. The movement of a drone about a lateral axis is called
   a. Roll
   b. Pitch
   c. Yaw
   d. Both (b) and (c)

3. What does UAV denote?
   a. Unanimous Aerial Vehicle
   b. Unmanned Autonomous Vehicle
   c. Unmanned Aerial Vehicle
   d. Both (b) and (c)

4. The up and down movement of the drone is called
   a. Throttle
   b. Hover
   c. Pitch
   d. Both (a) and (b)

5. The _____ is the central control unit of UAV.
   a. Power module
   b. Ground control station
   c. Data link
   d. GNSS

6. The force acting on the drone in the opposite direction of motion due to air resistance is called
   a. Thrust
   b. Weight
   c. Drag
   d. None of the above

7. ESC denotes
   a. Electronic Speed Controller
   b. Electrical Speed Controller
   c. Electronic Spatial Controller
   d. Electrical Spatial Controller

8. Mid-range drones have a distance range of approximately
   a. 500 miles
   b. 400 miles
   c. 100 miles
   d. 90 miles

9. In a hexacopter the rotors are
   a. 90 degrees apart
   b. 160 degrees apart
   c. 100 degrees apart
   d. 120 degrees apart

10. When air flows over a wing

a. Velocity increases at top and pressure air decreases
b. Velocity decreases at top and pressure air increases
c. Both velocity and pressure increases
d. None of the above

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Descriptive

Time : 1 hrs. 15 min. Marks: 25

[Answer question no.1 & any four (2) from the rest]

1. Discuss the working principle of drone and flow patterns with appropriate figures. 5

2. Explain anatomy of drone with proper diagram. (State and explain any six features) 10

3. Explain the policy gaps for drone regulations in India. 10

4. Explain how drones have been employed in oceanic exploration. 10

5. Explain the types of drones based on number of rotors and size. 10

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