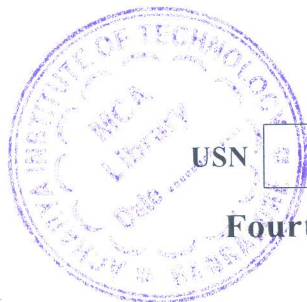


# CBCS SCHEME

BAE456B



USN

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Question Paper Version : D

## Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024 Drone Pilot Training

Time: 1 hr.]

[Max. Marks: 50

### INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. What is the term for avoidance of obstacles by a drone using sensors and software?  
a) Stabilization  
b) Calibration  
c) Data logging  
d) Obstacle avoidance
  2. What does the IMU in a drone measure?  
a) Air pressure  
b) GPS coordinates  
c) Battery voltage  
d) Accelerations and angular velocities
  3. What weather condition can significantly impact a multi rotor drone's flight performance?  
a) Low temperature  
b) High temperature  
c) Strong winds  
d) All of these
  4. What pre-flight check ensures a multi rotor drone's compass is calibrated for accurate navigation?  
a) Motor function test  
b) Battery level check  
c) Compass calibration  
d) Proper damage inspection

5. The pre-flight check to ensure a drone is safe and functional is called a
  - a) Calibration
  - b) Pre-flight inspection
  - c) Post-flight analysis
  - d) In-flight diagnostics
6. What is the main function of drone's gimbals?
  - a) Stabilize the camera
  - b) Increased flight time
  - c) Enhance GPS accuracy
  - d) Control motor speed
7. Which component is a drone is primarily responsible for stabilizing and controlling flight?
  - a) Propellers
  - b) ESC
  - c) Flight controller
  - d) Battery
8. What does FPV stand in drone technology?
  - a) First person view
  - b) Fast propeller velocity
  - c) Forward propulsion vehicle
  - d) Fixed position view
9. What phenomenon can occur when flying a drone near a cold front?
  - a) Increased visibility
  - b) Stable weather
  - c) Sudden wind shifts
  - d) Improved battery life
10. How should you respond to a drone's battery warning alert?
  - a) Ignore if the drone is close to the destination
  - b) Perform an immediate return to home (RTH)
  - c) Turn off the camera to conserve power
  - d) Increase altitude to use less battery power
11. Which sensor is essential for maintaining altitude in a drone?
  - a) Temperature sensor
  - b) Barometer
  - c) GPS sensor
  - d) Light sensor
12. Why it is important to calibrate a drone's compass?
  - a) To ensure accurate navigation
  - b) To ensure video quality
  - c) To increase flight time
  - d) To improve propeller efficiency
13. Which factor can significantly affect drone flight performance?
  - a) Wind speed and direction
  - b) Color of drone
  - c) Type of landing gear
  - d) None of these

14. What is the function of the propeller guard on a  
a) To improve flight speed  
b) To increase battery life  
c) To protect the propellers  
d) To stabilize the drone
15. Which weather condition is generally unsuitable for drone flight?  
a) Strong winds  
b) Sunny weather  
c) Cloudy skies  
d) Light rain
16. Which aspect of drone flying can be effectively protective using a flight simulator?  
a) Weather conditions  
b) Battery replacement  
c) Drone Maintenance  
d) Flight Maneuvers
17. What can a pilot learn from the telemetry data provided by a flight simulator?  
a) Color of a drone  
b) Performance matrices  
c) Battery replacement  
d) Propeller installation
18. Which skill can be effectively improved by using a flight simulator for drone flying lesson?  
a) Battery replacement  
b) Enhancing drone's speed  
c) Maneuvering and control  
d) None of the above
19. What is an important safety guideline when operating a drone?  
a) Flying over crowded  
b) Ignoring weather conditions  
c) Maintaining visual LOS  
d) Flying near airport
20. How does a flight simulator aid in understanding drone aerodynamics?  
a) Providing a realistic model  
b) By increasing flight time  
c) By enhancing the drone's appearance  
d) By improving camera stability.
21. What is the main hazard of flying a drone in snow?  
a) Overheating of motors  
b) Reduced battery life  
c) Enhanced lift  
d) Battery position

22. Which component is crucial for balancing the drone after installing a payload?
- Propeller size
  - Flight controller
  - center of gravity
  - Battery position
23. Why it is important to secure the payload properly?
- To ensure faster flight speeds
  - To enhanced battery life
  - To improve the drone's appearance
  - To prevent from detaching during flight
24. Which pay load is commonly used for agricultural drones?
- Sprayers
  - Thermal cameras
  - Parcel delivery
  - Loud speakers
25. Which sensor payload is useful for mapping and surveying?
- Loud speaker
  - LiDAR
  - Thermal camera
  - Delivery box
26. What is the primary use of drones in image and video interpretation?
- Recreational flag
  - Capturing aerial imagery
  - Delivering packages
  - Playing games
27. Which type of camera is commonly used for thermal imaging in drones?
- RGB camera
  - Infrared camera
  - LiDAR sensor
  - All of these
28. How does an increasing payload affect a drone's flight time?
- Increases flight time
  - Decreases flight time
  - Has no affect on flight time
  - Doubles the flight time
29. Which technique is used to crate 3D models from drone imagery?
- Photogrammetry
  - Audio mapping
  - Video rendering
  - Text editing
30. What is the role of electronic speed controllers in drones?
- To control the speed
  - To increase battery life
  - To enhance camera stability
  - To improve GPS accuracy
31. What component generates lift in a fixed wing drone?
- Fuselage
  - Wings
  - Propeller
  - Tail

32. Which axis is controlled by the ailerons on a fixed wing drone?  
a) Pitch                      b) Yaw                      c) Thrust                      d) Roll
33. What is the purpose of flaps on a fixed wing  
a) To increase lift  
b) To control roll  
c) Increase speed  
d) Stabilize the drone
34. What is the relationship between air density and lift?  
a) Directly proportional  
b) Inversely proportional  
c) No-relationship  
d) Exponentially proportional
35. The elevator on a fixed wing drone is used to control  
a) Direction                      b) Altitude                      c) Speed                      d) All of these
36. What is the slight control system responsible for maintaining a fixed wing drone's stability?  
a) Auto pilot                      b) GPS  
c) Inertial Measurement Unit                      d) Remote controller
37. What most affects lift by propellers?  
a) Propeller rotational speed                      b) Drone weight  
c) Propeller material                      d) propeller angle
38. What is the importance of following drone flight regulations?  
a) To ensure airspace safety                      b) To protect privacy  
c) To avoid fines and penalties                      d) All of these
39. What is the recommended procedure for storing a multi rotor drone's battery?  
a) Fully charged  
b) Completely discharged  
c) Partially charged  
d) In extreme temperatures
40. Loss of control due to signal interference with a multi drone is called  
a) Signal degradation                      b) Signal drift  
c) Signal saturation                      d) Signal dropout
41. What does DGCA stands for?  
a) Directorate General of Cargo Aviation  
b) Directorate General of Civil Aviation  
c) Directorate General of Commercial Aviation  
d) Directorate General of Combat Aviation
42. Which document a pilot must hold to legally fly an aircraft in India?  
a) Aircraft operator certificate  
b) Airworthiness certificate  
c) Pilot license  
d) Flight duty certificate

43. Which of the following is not a function of DGCA  
a) Licensing of pilots  
b) Regulation of air traffic control  
c) Investigation of aviation accidents  
d) Aircraft certification
44. What is the validity period of a Private Pilot License (PRINCIPLE) issued by the DGCA?  
a) 1 year                      b) 5 years                      c) Life time                      d) 10 years
45. What does DGCA stands for?  
a) Directorate General of Cargo Aviation  
b) Directorate General of Civil Aviation  
c) Directorate General of Commercial Aviation  
d) Directorate General of Combat Aviation
46. What technology do most drones used to determine their position?  
a) LIDAR                      b) Radar                      c) GPS                      d) All of these
47. What is the primary function of an rudder?  
a) To control pitch  
b) To control roll  
c) To increase lift  
d) To control Yaw
48. What principle explains how lift is generated by an aircraft wing?  
a) Bernoulli's principle  
b) Newton's law  
c) Archimedes principle  
d) Pascal's law
49. What does ATC stand for in aviation?  
a) Air transport command  
b) Air traffic control  
c) Aerial traffic company  
d) Air travel corporation
50. Under the drone rules 2021, what is the maximum weight for a Nano drone?  
a) 50 grams                      b) 100grams                      c) 250 grams                      d) 500 grams

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