

A

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code: R9371

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2025

Open Elective

R21UEE971 – DRONE TECHNOLOGIES

(Regulations R2021)

(Common to All Engineering Branches)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. _____ is an application of drone. CO1- U
(a) Monitoring (b) Aerial Mapping
(c) Structural Health Monitoring (d) All of the above
2. Photo grammetry creates dynamic, measurable documents using system of _____ CO1- U
(a) UAV mounted sensors (b) GIS mapping system
(c) Both of the above (d) None of the above
3. _____ is not an application of drone. CO1- U
(a) Photogrammetry (b) Land Survey (c) Population Survey (d) Under Water Survey
4. _____ term is not used for drones. CO1- U
(a) Rapid Action Fight System (RAFS) (b) Unmanned Aircraft Vehicle System (UAWS)
(c) Remotely Piloted Aerial System (d) Remotely Piloted Aircraft System (RPAS)
5. _____ is a typical sensor found on drones. CO1- U
(a) Thermometer (b) Gyroscope (c) Barometer (d) All of the above
6. _____ is the primary purpose of a drone's flight mode. CO1- U
(a) To control the altitude of the drone
(b) To define the operational parameters for different flight conditions
(c) To increase the speed of the drone
(d) To manage battery usage

7. _____ factor is most important when choosing a drone for a specific commercial application. CO1- U
- (a) Brand reputation (b) Flight duration and range
(c) Aesthetic design (d) Cost of the drone
8. In insurance sector drones are used for _____ CO1- U
- (a) To deliver insurance documents
(b) To assess damages in hard-to-reach areas
(c) To manage insurance databases
(d) To conduct interviews with policyholders
9. _____ is one of the primary safety risks associated with drones. CO1- U
- (a) Increased battery life (b) Reduced cost of production
(c) Collision with other aircraft (d) Improved GPS accuracy
10. _____ guideline is crucial for flying drones safely. CO1- U
- (a) Flying in adverse weather conditions
(b) Ignoring local regulations
(c) Maintaining a visual line of sight with the drone
(d) Operating drones without any prior training

PART – B (5 x 2= 10 Marks)

11. Explain the main objectives of drone. CO1- U
12. Summarize the different parts of a drone. CO1- U
13. Explain the purpose of the "Return to Home" (RTH) mode in a drone. CO1- U
14. Mention the advantages of using drones for filming and panoramic picturing. CO1- U
15. List out the common safety risks associated with the use of drones? CO1- U

PART – C (5 x 16= 80 Marks)

16. (a) Explain in detail about the drone concept. Describe the basic components and functionality of drones, including advantages, disadvantages and applications. CO-1 U (16)
- Or
- (b) Explain in detail about the different types of current generation of drones based on their method of propulsion. CO-1 U (16)

17. (a) (i) Describe the main components of a typical drone system. CO-1 U (8)
(ii) Explain how each component contributes to the drone's operation and performance. (8)
- Or
- (b) Explain the basic classifications of UAVs and describe the key components of a drone, including their technical characteristics and functions. Discuss how a drone is assembled, powered, and programmed for operation. Include an overview of flight modes, stabilization methods, and the role of connectivity features such as Wi-Fi. CO-1 U (16)
18. (a) Describe the steps involved in operating a small drone in a controlled environment. What safety measures and management tools are essential during operation? CO-1 U (16)
- Or
- (b) Explain how linked mobile devices and applications are used in drone control and operation. How do they contribute to real-time flight management and data processing? CO-1 U (16)
19. (a) Discuss the key factors to consider when choosing a drone for a specific commercial application, such as agriculture or parcel delivery. Provide examples of how different drones are suited to different tasks. CO-1 U (16)
- Or
- (b) Explain how drones are transforming the process of delivering mail, parcels, and other cargo. What logistical challenges do drones address in the delivery sector? CO-1 U (16)
20. (a) Describe the steps involved in obtaining a drone license. What are the key requirements and training necessary to operate drones legally and safely? CO-1 U (16)
- Or
- (b) Examine the safety risks associated with drone operations and discuss the guidelines that should be followed to ensure safe flying practices. CO-1 U (16)

