Final Exam
Drones for Engineers

1. Which drones have cameras that can see above level?
   ○ a. Albris
   ○ b. Matrice 210
   ○ c. Mavic Pro
   ○ d. all of the above

2. Bridge inspection by drone is suitable for:
   ○ a. Elements in poor condition
   ○ b. Fracture critical members
   ○ c. Routine inspections
   ○ d. Underwater components

3. No fly zones with or without traffic control towers are how far away?
   ○ a. one mile
   ○ b. 2 miles
   ○ c. 3 miles
   ○ d. 5 miles

4. Who is responsible for bridge load rating calculations?
   ○ a. the Team Leader
   ○ b. the Professional Engineer
   ○ c. neither
   ○ d. both

5. The MnDOT bridge inspection by a drone cost about what percent of a conventional inspection?
   ○ a. 10%
   ○ b. 33%
   ○ c. 50%
   ○ d. 80%

6. The safety enclosure of Flyability's Elios protects:
   ○ a. the drone
   ○ b. people
   ○ c. occupied vehicles
   ○ d. all of the above

7. A drone Forward Looking Infrared camera works as well as one hand held
   ○ a. True
   ○ b. False

8. HAZON Solutions drones inspected how many railroad bridges by mid 2017?
○ a. 24
○ b. 64
○ c. 100+
○ d. 100,000

9. The slate roof facing the reservoir water was best inspected by which intelligent flight mode?
○ a. Active Track
○ b. Point of Interest
○ c. Home Lock
○ d. Follow Terrain

10. How many USA dams are over 100 years old?
○ a. 1000
○ b. 3000
○ c. 4000
○ d. 5000

11. The Sensefly drone inspected how many solar panels in five minutes?
○ a. 1000
○ b. 3000
○ c. 4000
○ d. 5000

12. Drones carry flood lights to inspect the inside of a commercial boiler:
○ a. True
○ b. False

13. Drones can be electrically powered by
○ a. Batteries
○ b. Wire to the ground
○ c. Neither
○ d. Both

14. Boilers inspected by drones do not save:
○ a. Repair work
○ b. Scaffolding
○ c. Cooling down costs
○ d. Turnaround time

15. Offshore platform data is shared with:
○ a. the Coast Guard
○ b. Helicopter pilots
○ c. Structural engineers
○ d. Federal Aviation Administration

16. A drone inspecting a sewer system for leaks searches for:
○ a. Infrared changes
○ b. Odor detection
○ c. Smoke
○ d. Plumber's Dye

17. Damage pictures of roof shingles must be made public record.
○ a. True
○ b. False

18. Hail damage pictures are broken into tiles measuring:
○ a. 200 x 200 tiles
○ b. 200 x 300 tiles
○ c. 16 x 9 aspect ratio
○ d. 300 x 300 tiles

19. IBM's Watson cloud storage reduces computation time from three hours to:
○ a. 10 minutes
○ b. 20 minutes
○ c. 30 minutes
○ d. one hour

20. Thermal imaging by a drone can detect underground:
○ a. stone walls
○ b. ancient settlements
○ c. neither
○ d. both

21. If Rebar is inspected with ultra high definition pictures, what is that size?
○ a. 1920 x 1080 pixels
○ b. 3840 x 2160 pixels
○ c. 960 x 720 pixels
○ d. 512 x 384 pixels

22. Which is not a Site scan mode?
○ a. ReFly Previous
○ b. Crosshatch
○ c. Perimeter
○ d. Gesture

23. Contours by drone can be down to every:
○ a. 10 feet
○ b. 2 feet
○ c. 5"
○ d. 1"

24. The FAA Part 107 test has how many questions?
○ a. 10
○ b. 25
○ c. 60
○ d. 100

25. Which class of airspace is approved for drone flying:
○ a. G
○ b. D
○ c. C
○ d. A

26. How late at night can a Part 107 pilot fly without a waiver?
○ a. Until Sunset
○ b. 10 minutes after sunset
○ c. 20 minutes after sunset
○ d. 30 minutes after sunset

27. If flying for recreation at no pay, a hobbyist must notify airports even without control towers how many miles away?
○ a. 1
○ b. 5
○ c. 10
○ d. 20

28. Which intelligent flight mode repeats the previous flown or programmed mission?
○ a. Tripod
○ b. Waypoints
○ c. Follow me
○ d. Cinematic

29. Which ISO setting is best for a bright sunny cloudless day?
○ a. 100
○ b. 400
○ c. 800
○ d. 1600

30. How many minutes of 4k video can be stored on a 16 GB SD card?
○ a. 16
○ b. 32
○ c. 48
○ d. 100