

# **Beale Aero Club Aircraft**

## **Written Test**

### **C177-RG**

**(Required passing score: 80%)**

**THIS TEST IS NOT COMPLETE WITHOUT BOLDFACE/OPS LIMITS**

**\*\*PLEASE MAKE SURE ALL ANSWERS FOR THIS TEST ARE  
ON FORM 1584C- ANSWER BUBBLE SHEET LOCATED IN  
THE BEALE ONLINE LIBRARY\*\***

1. The usable fuel capacity for the Cardinal is \_\_\_\_\_ gallons.
  - a. 61
  - b. 22
  - c. 60
  
2. To facilitate fueling to reduced fuel loads, a \_\_\_\_\_ gallons marker is provided inside each tank filler neck in the form of \_\_\_\_\_.
  - a. 22, a tab
  - b. 22, a series of small holes
  - c. 22, an aircraft fuel dip stick
  
3. The fuel reservoir drain lever should be checked closed in-flight if
  - a. gasoline fumes are noticed
  - b. power loss symptoms are noticed
  - c. both a and b
  
4. The auxiliary fuel pump may be used for vapor suppression in hot weather, however caution should be used because turning on the auxiliary fuel pump with a normally operating engine pump will result in a major enrichment of the mixture.
  - a. true
  - b. false
  
5. A warning horn will sound intermittently whenever the throttle is reduced below approximately \_\_\_\_\_ inches manifold pressure (master switch on) if the gear is not down and locked.
  - a. 14
  - b. 13
  - c. 12

6. When checking magnetos, a smooth drop off past normal (150 RPM) usually means which of the following:
  - a. too lean a mixture
  - b. too rich a mixture
  - c. either a or b
  
7. The auxiliary fuel pump is normally off during takeoff; however, it may be used on takeoff if there is evidence of fuel vapor as indicated by:
  - a. fluctuating fuel flow indicator needle
  - b. rough engine operation
  - c. both a and b
  
8. The preferred flap setting for normal takeoff is 10 degrees.
  - a. true
  - b. false
  
9. During in route climbs, air speed is normally at \_\_\_\_ to \_\_\_\_ MPH, \_\_\_\_ inches manifold pressure, \_\_\_\_ RPM and \_\_\_\_ GPH fuel flow.
  - a. 100 to 120 MPH, 27 inches, 2700 RPM and 19 GPH
  - b. 100 to 120 MPH, 25 inches, 2500 RPM and 13 GPH
  - c. 100 to 120 MPH, 24 inches, 2400 RPM and 12 GPH
  
10. Best economy leaning is peak EGT minus 25°F (enriched).
  - a. true
  - b. false
  
11. Slips are not recommended when full flaps are being used.
  - a. true
  - b. false

12. During cold weather operations, there might not be an apparent indication on the oil temperature gauge prior to takeoff. You therefore should not take off (unless):
  - a. until you have a positive temperature indication
  - b. no further checks are required and you can take off immediately as this is normal operation in cold weather
  - c. after a suitable warm-up period (2 to 5 mins at 1000 RPM) if the engine accelerates smoothly and the oil pressure remains normal and steady, you can takeoff
  
13. If forced to use the alternate static source valve, the following should be accomplished:
  - a. cabin heat should be turned off
  - b. cabin ventilators should be opened
  - c. cabin vent windows should be closed
  
14. Low oil pressure accompanied by normal oil temperature could mean which of the following
  - a. oil pressure relief valve is malfunctioning
  - b. low electrical system voltage
  - c. both a and b
  
15. If manual lowering of the gear is required and the gear down green light illuminates, which of the following should *not* be done:
  - a. make a normal full flap approach to landing
  - b. stow manual gear down pump handle
  - c. push the landing gear circuit breaker in
  
16. The first step in the emergency Manual Gear Extension sequence is to
  - a. slow the airspeed below  $V_A$
  - b. lower the flaps
  - c. pull the landing gear circuit breaker

17. If you had to perform an emergency gear extension, but you did not get a positive gear locked indication, you should maintain landing gear down pressure with the \_\_\_\_\_.
- a. circuit breaker
  - b. manual hand pump
  - c. landing gear lever in the down position
18. To extend the flaps beyond 10° you should slow the aircraft to \_\_\_\_\_MPH or less.
- a. 130
  - b. 110
  - c. 100
19. What is max maneuvering speed?
- a. 130 MPH
  - b. 150 MPH
  - c. 145 MPH
20. Continuous operations between \_\_\_\_\_ and \_\_\_\_\_ RPM with less than \_\_\_\_\_ inches manifold pressure should be avoided.
- a. 1400, 1750, 10
  - b. 1500, 1800, 12
  - c. 1400, 1750, 12

21. Weight and Balance

Given: Empty weight-	1765 lbs	moment-	183.1
Full oil-	17 lbs		
Full fuel-	60 gallons		
Pilot & front pax-	340 lbs		
Rear pax-	200 lbs		
Baggage area A-	48 lbs		
Baggage area B-	70 lbs		

Find: Weight, Total Moment, is Aircraft within Center of Gravity Limits?

- a. 2800 lbs / 294 / No
- b. 2800 lbs / 302.4/ Yes
- c. 2800 lbs/ 305.5 / Yes

22. Performance Problem – Takeoff Distance Calculation

Given: Field Elevation – 2500 ft

Temperature – 21 °C

Gross Weight – 2800 lbs

Headwind – 10 kts

Runway – Dry grass

Find: Total distance to clear 50 ft obstacle

- a. 1460 ft
- b. 1577 ft
- c. 1735 ft

23. What is the best glide speed at 2800 lbs?

- a. 85 MPH
- b. 90 MPH
- c. 75 MPH

(For questions 24 and 25 refer to the Aircraft Supplements available in the Beale Online Library)

24. The VCALC page on the Garmin 650 uses GPS position, GPS computed altitude, and pilot selected parameters to calculate and display what?
- a. where you will end up if continuing with current descent rate
  - b. the time to begin descent and vertical speed required to reach a desired altitude above a designated waypoint offset
  - c. both a and b
25. On the JPI, what will happen if a measured parameter falls outside of the normal allowed operating limit, i.e. goes beyond redline?
- a. the main display will blink an alert icon
  - b. an audio alert will go off
  - c. both a and b
  - d. nothing