GACE Flying Club Aircraft Review Test 2018
N5312S & N5928E

Name: _____ GACE #: _____ Score: _____

Checked by: _____ CFI #: _____ Date: _____

(The majority of these questions are for N5312S. All N5928E questions will be marked **28E**)

1. What is the total usable fuel capacity? _____ /Section: Page:
2. To ensure maximum fuel capacity and minimize cross-feeding when refueling we should always? _____/Section: Page:
3. **28E:** What is the total usable fuel capacity? _____/Section: Page:
4. What is the maximum certificated takeoff weight in the normal Category =_____, and utility category = _____ /Section: Page:
5. What is the Va (maneuvering speed) at 1900 lbs.? = _____Do not make _____control movements above this speed. /Section: Page:
6. The maximum speed for flaps 10 degrees? _____ /Section: Page:
7. What color on the airspeed indicator denotes the full flap operating range? _____ /Section: Page:
8. The static RPM range at full throttle is? _____/Section: Page:
9. What is the minimum and maximum oil pressure limits? _____ /Section: Page:
10. The engine lubrication system has a total capacity of? _____ /Section: Page:
11. The engine must not be operated with less than _____of oil? /Section: Page:
12. **28E:** The total capacity of the lubrication system is? _____ /Section: Page:
13. **28E:** Do not operate on less than? _____ /Section Page:
14. Flight into known icing is? _____ /Section: Page:
15. Takeoff and landing should be accomplished with the fuel selector in _____position? /Section: Page:
16. The approved flap limitation for takeoff is? _____ /Section: Page:

17. What is the maximum weight that can be loaded in the baggage compartment? _____
How much of that weight can be put aft of the baggage door latch? _____
/Section: Page:

18. What is the maximum allowable aft C.G. in the normal category? _____
/Section: Page:

19. What is the engine failure after takeoff speed, flaps up? _____, Flaps down? _____
/Section: Page:

20. What are the first four corrective actions if you experience engine failure during flight?
    1. _____
    2. _____
    3. _____
    4. _____

/Section: Page:

21. **28E**: At what RPM setting should you begin using Carburetor Heat? _____

22. **28E:** How is carburetor ice detected and cleared?

_____
_____
_____
_____
_____

/Section: Page:

23. What is the corrective action if the fuel flow indicator drops to zero?

_____

/Section: Page:

24. Indicated fuel flow that is not stable (sudden changes greater than 1 gal/hour) is a sign that fuel vapor may be present and may lead to power surges and power loss if not corrected. What are three corrective actions:
    a. _____
    b. _____
    c. _____ /Section: Page:

25. List the first six actions to be taken when executing a forded landing without engine power.
    1. _____
    2. _____
    3. _____
    4. _____
    5. _____
    6. _____

/Section: Page:

26. What is the procedure for landing without Elevator Control?

_____
_____
_____
_____

27. List the procedure for landing with a flat main tire.

1. _____
2. _____
3. _____
   _____
4. _____
   _____

/Section: Page:

28. The low voltage light illuminates during flight (ammeter indicates discharge), what are the first four actions to be taken?

1. _____
2. _____
3. _____
4. _____

If the low-voltage light illuminates again, then:

7. _____
8. _____
9. _____

/Section: Page:

29. You INADVERTENTLY encounter icing conditions. What are two systems you should turn on to help your situation. 1. _____ 2. _____

/Section: Page:

30. True or False: When landing with ice accumulation it is best to land with partial flaps?

_____ /Section Page:

31. **28E**: You INADVERTENTLY encounter icing conditions and notice a reduction of RPM. What systems should you turn on?

1. _____
2. _____
3. _____

/Section: Page:

32. **28E**: True or False. The use of full carburetor heat is recommended during flight in heavy rain. _____ /Section: Page:

33. **28E**: True or False. When flying on hot days with high humidity it's a good idea to use partial carburetor heat to help with preventing carburetor icing. _____

34. What is the best rate of climb speed at seal level? _____ /Section: Page:

35. What is the best angle of climb speed at sea level? _____ /Section: Page:

36. What is the maximum demonstrated crosswind velocity for takeoff or landing?_____ /Section: Page:

37. Taking off into strong crosswind conditions normally are performed with the minimum flap setting necessary for the field length, to minimize the drift angle immediately after takeoff. With the ailerons partially deflected into the wind, the airplane is accelerated to a _____, then pulled off briskly to prevent possible settling back to the runway while drifting.
/Section: Page:

38. What airspeed should be achieved before retracting flaps to 10 degrees during a balked landing? _____ /Section: Page:

39. Never use _____when moving the airplane by hand.
/Section: Page:

40. At what speed should you trim the airplane if the cabin door opens accidentally? _____
/Section: Page:

41. The engine air induction system receives ram air through an intake on the lower front engine cowling. What happens if this intake becomes blocked?
_____
_____
_____
_____
/Section: Page:

42. On the annunciator panel you notice this light: L VAC. What has happened?
_____
_____
/Section: Page:

43. Nose wheel pressure should be _____and main wheels _____ /Section: Page:

44. What is the purpose of Static Dischargers?
_____
_____
/Section: Page:

45. How many fuel drain points are there on N5312S? _____
/Section: Page:

46. What are the following limitations for use of the autopilot?
1. Autopilot minimum airspeed _____
2. Autopilot minimum altitude (VFR, normal operations) _____
3. Autopilot maximum flap extension _____
/Section: Page:

47. List all five ways to disconnect the autopilot.
a. _____
b. _____
c. _____
d. _____
e. _____

48. **28E:** Nose wheel tire pressure should be _____and main wheel tire pressure should be _____
/Section: Page:

49. 28E: Is it okay to use a glass cleaner when cleaning 28E or 12S's windshield? _____
/Section: Page:

50. **= WEIGHT & BALANCE: Calculate "CG" from the following loading**

ITEM DESCRIPTION	Weight	Arm	Moment/1000
1. Basic Empty Weight	1650.45	38.46	63.47
2. Usable Fuel (53 gal)	318		
3. Pilot & Passenger	360		
4. Rear Passenger	200		
5. Baggage Area 1	25		
6. Baggage Area 2			
7. Ramp Weight & Moment			
8. Fuel allowance for engine start, taxi and run up	-8.0		-0.4
9. Takeoff Weight & Moment			
10. Center of Gravity			

SHORT FIELD TAKEOFF DISTANCE AT 2550 POUNDS

CONDITIONS:

Flaps 10°
Full Throttle Prior to Brake Release
Paved, level, dry runway
Zero Wind
Lift Off: 51 KIAS
Speed at 50 Ft: 56 KIAS

Press Alt In Feet	0°C		10°C		20°C		30°C		40°C	
	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst
S. L.	860	1465	925	1575	995	1690	1070	1810	1150	1945
1000	940	1600	1010	1720	1090	1850	1170	1990	1260	2135
2000	1025	1755	1110	1890	1195	2035	1285	2190	1380	2355
3000	1125	1925	1215	2080	1310	2240	1410	2420	1515	2605
4000	1235	2120	1335	2295	1440	2480	1550	2685	1660	2880
5000	1355	2345	1465	2545	1585	2755	1705	2975	1825	3205
6000	1495	2605	1615	2830	1745	3075	1875	3320	2010	3585
7000	1645	2910	1785	3170	1920	3440	2065	3730	2215	4045
8000	1820	3265	1970	3575	2120	3880	2280	4225	2450	4615

NOTES:

1. Short field technique as specified in Section 4.
2. Prior to takeoff from fields above 3000 feet elevation, the mixture should be leaned to give maximum RPM in a full throttle, static runup.
3. Decrease distances 10% for each 9 knots headwind. For operation with tail winds up to 10 knots, increase distances by 10% for each 2 knots.
4. For operation on dry, grass runway, increase distances by 15% of the "ground roll" figure.

Figure 5-5. Short Field Takeoff Distance (Sheet 1 of 3)

You are departing KDXR (Danbury) on runway 08. Weather is reported as: KDXR 1953Z 08010KT 10SM CLR 25/10 A2995

1. **Calculate the ground roll:**
2. **How many feet would you need to clear a 50ft obstacle?**
3. **How many feet would you need to clear a 100ft obstacle?**

CESSNA
MODEL 172S

SECTION 5
PERFORMANCE

CRUISE PERFORMANCE

CONDITIONS:
2550 Pounds
Recommended Lean Mixture At All Altitudes (Refer to Section 4, Cruise)

PRESS ALT FT	RPM	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2000	2550	83	117	11.1	77	118	10.5	72	117	9.9
	2500	78	115	10.6	73	115	9.9	68	115	9.4
	2400	69	111	9.6	64	110	9.0	60	109	8.5
	2300	61	105	8.6	57	104	8.1	53	102	7.7
	2200	53	99	7.7	50	97	7.3	47	95	6.9
	2100	47	92	6.9	44	90	6.6	42	89	6.3
4000	2600	83	120	11.1	77	120	10.4	72	119	9.8
	2550	79	118	10.6	73	117	9.9	68	117	9.4
	2500	74	115	10.1	69	115	9.5	64	114	8.9
	2400	65	110	9.1	61	109	8.5	57	107	8.1
	2300	58	104	8.2	54	102	7.7	51	101	7.3
	2200	51	98	7.4	48	96	7.0	45	94	6.7
	2100	45	91	6.6	42	89	6.4	40	87	6.1
6000	2650	83	122	11.1	77	122	10.4	72	121	9.8
	2600	78	120	10.6	73	119	9.9	68	118	9.4
	2500	70	115	9.6	65	114	9.0	60	112	8.5
	2400	62	109	8.6	57	108	8.2	54	106	7.7
	2300	54	103	7.8	51	101	7.4	48	99	7.0
	2200	48	96	7.1	45	94	6.7	43	92	6.4

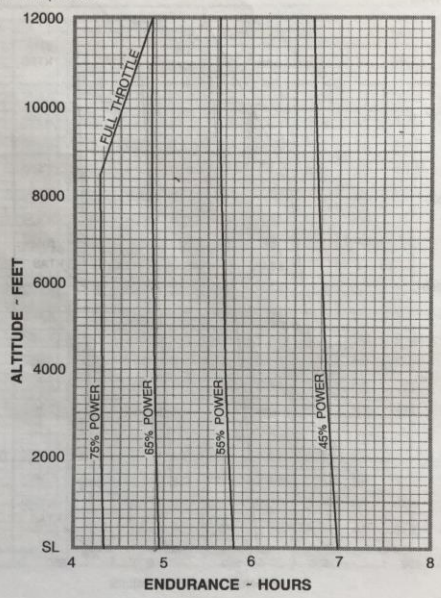
Calculate the performance at 2500 rpm given the following conditions:

Altitude: 4,500 feet
Temperature: +6C

BHP =
KTAS =
GPH =

ENDURANCE PROFILE
45 MINUTES RESERVE
53 GALLONS USABLE FUEL

CONDITIONS:
2550 Pounds
Recommended Lean Mixture for Cruise At All Altitudes
Standard Temperature



NOTE:
1. This chart allows for the fuel used for engine start, taxi, takeoff and climb, and the time during climb.

Figure 5-10. Endurance Profile

Calculate the Endurance from the answers above with a 45 minute reserve.