

## CESSNA 172SP Part I

- 1) What is the total usable fuel capacity?
  - a) 56 gal
  - b) 53 gal
  - c) 56 gal
  - d) 28 gal
  
- 2) The fuel selector may be in which of the following positions for landing?
  - a) left
  - b) right
  - c) both
  - d) all of the above
  
- 3) If the LOW FUEL R annunciator illuminated (other than during self test), this is an indication there is less than approximately \_\_\_\_ gallons of fuel remaining in the \_\_\_\_ tank.
  - a) 5/ the right
  - b) 5/ the left
  - c) 10/ either
  - d) all of the above
  
- 4) Buss voltage will be approximately \_\_\_\_ volts when operating with the standard 12.75AH battery only, and \_\_\_\_ volts when operating with the 60-amp alternator.
  - a) 12.0, 14.0
  - b) 1.5, 28.5
  - c) 24.0, 28.0
  - d) 24.0, 24.5
  
- 5) The maximum weight allowed in baggage area 1 is 120 lbs. The maximum weight allowed in baggage area 2 is
  - a) 120 lbs
  - b) Limited only by gross weight & c.g. considerations
  - c) 50 lbs for a total baggage capacity of 170 lbs
  - d) 50 lbs, but the total for areas 1 & 2 is limited to 120 lbs
  
- 6) If induction air system blockage occurs, the pilot should:
  - a) pull the static pressure alternate source valve and carefully monitor engine RPM and EGT
  - b) expect a 10% loss of power as induction air is drawn through the spring loaded alternate air door
  - c) manually open the alternate air door and apply carburetor heat immediately
  - d) Land immediately and have a qualified maintenance technician replace the induction air filter.

- 7) The aircraft has been serviced with SAE 50W oil. During a cross country you need to add oil, which of the following is acceptable?
- a) SAE 50W
  - b) SAE 15W-50
  - c) SAE 20W-50
  - d) all of the above
- 8) The recommended starter duty cycle is 10 seconds, followed by a 20 second cool down period. This cycle can be repeated \_\_\_\_ additional times but then the starter must be allowed to cool for \_\_\_\_minutes.
- a) 2, 10
  - b) 3, 10
  - c) 2, 20
  - d) 2, 5
- 9) Intentional stalls may be performed only if the aircraft is in the utility category. The utility category means
- a) the rear seat is unoccupied
  - b) the baggage compartment is empty
  - c) the gross weight is less than 2200 lbs
  - d) all of the above

You are planning a trip with three people. The aircraft is fully fueled. The pilot weighs 210 lbs. and sits with the seat pin engaged in the very last (AFT) hole. The passenger in the front seat weighs 150 lbs. and sits with the seat engaged in the very first (Forward) hole. The rear seat passenger weighs 100 lbs and is sitting behind the pilot.

Aircraft empty weight: 1673.0 lbs. Arm: 39.5652 Moment: 66,192.6

- 10) What is the aircraft weight?
- a) 2451
  - b) 2500
  - c) 2445
  - d) 2341
- 11) What is the aircraft moment?
- a) 102.5
  - b) 104.5
  - c) 103.5
  - d) 120.4
- 12) Is this loading approved for flight?
- a) Yes, in the normal category but not utility category
  - b) Yes, in both the normal category and utility category
  - c) no, it is out of the permissible range for c.g.
  - d) no, it over the maximum allowable gross weight

Given the following condition  
OAT: 10 C  
Field elevation: 3000  
Gross weight: 2550 lbs  
Wind: light and variable  
Fuel: Full  
Speed fairings: Removed  
Cruise altitude: 8000' MSL

- 13) What is the depicted short field takeoff distance to clear a 50' obstacle?
- a) 2280
  - b) 2180
  - c) 2080
  - d) 1980
- 14) If you returned to the airport immediately, and executed a short field landing, what would the depicted landing distance over a 50' obstacle be?
- a) 1325
  - b) 1430
  - c) 1375
  - d) 1425
- 15) Assuming a standard temp at 8000' MSL and a RPM setting of 2300, what will be your fuel burn per hour?
- a) 10.4
  - b) 7.5
  - c) 7.1
  - d) none of the above
- 16) Which of the following most accurately represents the glide range of the C-172S?
- a) 550'/nm
  - b) 670'/nm
  - c) 1200'/nm
  - d) 970'/nm
- 17) In the C172S there is an auxillary fuel pump in the aircraft. When should the auxillary fuel pump be used?
- a) To assist in priming the engine for start.
  - b) During hot starts.
  - c) In the event of the engine driven pump failing.
  - d) All of the above.
- 18) The maximum demonstrated crosswind for the C172S is?
- a) 13 knots
  - b) 15 knots
  - c) 17 knots
  - d) 20 knots

- 19) The proper leaning procedure for ground operations is:
- a) full rich only to prevent engine damage
  - b) rotate mixture control until approximately "2 fingers" lean of full rich
  - c) for maximum RPM at approximately 1200 RPM
  - d) for maximum RPM at approximately 1800 RPM
- 20) The proper leaning procedure prior to takeoff is:
- a) full rich only to prevent engine damage
  - b) rotate mixture control until approximately "2 fingers" lean of full rich
  - c) for maximum RPM at approximately 1800 RPM when DA exceeds 3000'
  - d) for maximum RPM at full throttle when DA exceeds 3000'

**CESSNA 172SP Part III**  
**Nav III System (G1000)**

- 31) If the amber LOW VACUUM annunciator light illuminates this is an indication:
- a) the vacuum system has failed, use partial panel procedures if in IMC
  - b) the aircraft should be written up and grounded
  - c) the vacuum pump has failed and the standby attitude indicator will not function properly. VFR flight is permitted but not IFR
  - d) both A & B
- 32) Regarding the installed anti-collision light systems, which of the statement below is most correct (Day-VFR)
- a) Rotating beacon must be functional and operated during flight
  - b) Strobe lights are required to be functional and operated during flight
  - c) Either strobe lights or rotating beacon must be functional & operated
  - d) Neither system is required to for Day-VFR
- 33) When using the Bendix/King KAP 140 2-axis autopilot in NAV, APR, or REV operating modes, if the HSI navigation source is switched from GPS to NAV1 or NAV2 automatically or manually, the change will affect the autopilot how?
- a) The autopilot will handle the switch automatically but not manually with an annunciation on the PFD and an audible chime.
  - b) The autopilot will handle the switch manually but not automatically with no annunciation on the PFD and no audible chime.
  - c) The autopilot will disengage when switched either manually or automatically with a warning chime audible to the pilot.
  - d) The autopilot will revert to the roll mode without chime or annunciation and the previously selected mode symbol shown on the autopilot display will be flashing.
- 34) Which of the following statements is/are FALSE regarding the standby battery:
- 1: Battery won't charge with the STBY BATT switch in the off position
  - 2: Engine start is accomplished with the STBY BATT in the arm position
  - 3: IFR or VFR Flight is allowed if the standby battery fails the pre-flight check
  - 4: Successful pre-flight test implies battery will supply 30 minutes of power
  - 5: Standby battery provides power only after M battery volts drops below 20V
  - 6: Standby battery can power any electrical device in the aircraft
- a) 1,3 & 6 are false
  - b) 1 & 3 only are false
  - c) 6 only is false
  - d) none of the above, all are true

35) The pilot may access the EGT and CHT information by pressing the soft keys on the MFD. Which of the following statements are true regarding proper leaning procedures in cruise?

**1:** If CHTs do not match within 30 degrees there is a malfunction in the fuel injection system.

**2:** The mixture is set using the hottest cylinder EGT.

**3:** The mixture is set using the EGT from the first cylinder to reach peak.

**4:** The Lean Assist feature makes setting the mixture quick and foolproof.

a) Only 1, & 2 are true

b) Only 1, & 3 are true

c) Only 2, & 4 are true

d) Only 3 is true

36) Which of the following statements is/are true about the MET system:

**1:** The Manual Electric Trim (MET) test is not required if the autopilot will not be used during flight

**2:** If the red P on the autopilot face does not go out following the autopilot self test, the pilot must pull the autopilot circuit breaker prior to takeoff

**3:** If no PT light appears after approximately 5 seconds during RH trim switch portion of the MET test, the pilot must pull autopilot circuit breaker prior to flight

**4:** KAP 140 altitude alerting tones will sound regardless of A/P engagement

**5:** The autopilot is not capable of exceeding airspeed or engine limits

a) 1 only is true

b) 2,3,& 4 only are true

c) 2,3,4,& 5 only are true

d) all of the above statement are true

37) The pilot is allowed to select the altitude in the Altitude Reference Box on the PFD. This box assists the pilot when flying to help the pilot maintain altitude. Does this setting automatically transfer to the autopilot?

a) Yes, all functions including the altimeter setting transfer.

b) Yes, the altitude selected does but not the BARO setting.

c) No, because the GPS supplies altitude information to the autopilot.

d) No, the pilot must also input the information into the autopilot.

38) Which of the following statements is/are true about the Artex C406-N ELT system:

- 1: When energized, the ELT transmits on 121.5 and 243.0 MHz.
- 2: The transmitter can be energized automatically or manually.
- 3: The ELT gives an aural and visual warning to the pilot when energized.
- 4: A cockpit-mounted switch can de-energize the ELT.
- 5: The ELT broadcasts a digital signal with the aircraft ID on 406 MHz.

- a) 1 only is true
- b) 1, 2 & 3 only are true
- c) 2, 3, & 4 only are true
- d) all of the statements are true

39) With loss of the Magnetometer (GMU 44) the AHRS will lose what important information?

- a) Attitude Indicator
- b) Heading Indicator
- c) Altitude
- d) Airspeed

40) In the event that the Air Data Computer (GDC 74A) fails what instruments will display red X's.

- a) Airspeed, Altitude, Vertical Speed and True Airspeed
- b) Heading and Course
- c) Attitude, Sideslip and Heading
- d) None of the above

41) The G1000 also displays information that helps the pilot as the aircraft is flying. One of these features is the Airspeed Trend Vector; similar to the Altitude Trend Vector and Turn Rate Indicator, it displays information for the pilot relating the speed of the aircraft within how long?

- a) 2 seconds
- b) 4 seconds
- c) 6 seconds
- d) 8 seconds

42) How does the G1000 PFD (and MFD) indicate what communication frequency is active for transmit?

- a) It is green
- b) It is white
- c) It is in the upper window
- d) It has a cyan border

- 43) To transmit and receive on COM 1 when using the G1000, the pilot must press which buttons on the audio panel?
- a) COM 1 button will select the ability to transmit and receive on COM 1 and turn off receiver audio for COM 2.
  - b) COM 1 button will select the ability to transmit and receive on COM 1 but **not** turn off receiver audio for COM 2.
  - c) COM 1 MIC button will allow the pilot to transmit and receive on COM 1 and turn off the receiver audio for COM 2.
  - d) COM 1 MIC button will select the ability to transmit and receive on COM 1 but may not turn off the receiver audio for COM 2
- 44) While taking a cross country flight with a couple of friends the pilot wishes to limit the audio being received by the passengers so that they will not interrupt the transmissions to and from the aircraft, how is this done?
- a) Push the PILOT ICS Isolation Key so that the triangle above the button is illuminated. Only the pilot will receive the transmissions while the passengers can converse without interrupting.
  - b) Push the COPILOT ICS Isolation Key to allow the co-pilot to hear only the co-pilot. We all know a person who would benefit from this feature and probably not even notice when it was activated.
  - c) There is no way for the pilot to limit who hears the transmissions to and from the aircraft, therefore all passengers should be briefed on when not to converse.
  - d) Both A & B.
- 45) The transponder on the G1000 has the capability to operate under Modes A, C, and S allowing the pilot to have more situational awareness. Which of the following is true regarding transponder operation:
- a) Use the MFD to display the transponder information then use softkeys as necessary to set the code and turn the system on.
  - b) The Mode S transponder is completely automated. No squawk needs to be set since it is keyed to the aircraft tail number. The G1000 automatically sets the transponder to ALT upon takeoff and to GND when not airborne.
  - c) Use the softkeys on the PFD, XPDR then CODE, and then input all four numbers. The G1000 automatically sets the transponder to ALT upon takeoff and to GND after landing.
  - d) Use the softkeys on the PFD, XPDR then CODE, and then input all four numbers. Use the softkeys on the PFD, XPDR then ALT prior to takeoff and GND after landing.

- 46) The G1000 can calculate the aircraft range based on the fuel totalizer (GAL REM and GAL USED counters) which is accessed via the ENGINE, then SYSTEM softkeys on the MFD (or PFD in reversionary mode). What is important to remember about these values?
- a) The system automatically senses the GAL REM from the readings of the fuel tanks. GAL USED is automatically reset at engine start.
  - b) The pilot can reset GAL USED at any time and must set the GAL REM counter manually.
  - c) GAL REM is an estimate of the fuel remaining at the destination in the active flight plan and is based upon the GAL USED value which is automatically reset at engine start.
  - d) The calculations are simply made from values input by the pilot on the AUX trip planning page of the MFD.
- 47) The System Status page is accessed via the MFD Aux Page 8. This page presents the status of all LRU's in the event the pilot suspects that one of the units providing the G1000 with data has been compromised. What presentation of the PFD might prompt the pilot to check this page?
- a) A frozen or erratic heading indicator
  - b) A red X on any feature of the PFD
  - c) A message in the ALERT window on the PFD
  - d) A red MASTER WARNING in the Annunciation Window
- 48) The G1000 is also capable of TIS, or Traffic Information Service, being displayed to the pilot if selected on the inset map or MFD map. Which of the following statements is true?
- a) TIS should be disabled in the traffic pattern, especially at Edwards AFB, to avoid numerous distracting flashing alerts on the PFD and voice alerts.
  - b) The system functions only when in radar coverage by **any** ATC facility.
  - c) There is no alert when TIS info becomes available but "Traffic Not Available" will be heard whenever TIS service becomes unavailable.
  - d) All of the above are true.

- 49) If desired, a waypoint that is not in the flight plan may be made the active waypoint by pressing the **Direct-To** button and entering the waypoint identifier. This puts the system into the Direct-To navigation mode. To cancel this mode and return to a leg on the active flight plan, what must the pilot do?
- a) On the flight FPL page, turn on the cursor, highlight the desired leg, press the **ENT** key
  - b) Press the **Direct-To** key, Press the **Menu** key, highlight *Cancel Direct-To Nav*, press the **ENT** key
  - c) Press and hold the **CLR** key, the system will automatically activate the appropriate leg in the active flight plan
  - d) Press the **Direct-To** key, turn on the cursor, highlight the direct-to waypoint, press the **CLR** key
- 50) The PFD and MFD displays are very sensitive to skin oils, waxes, and abrasive cleaners. Make a concerted effort to avoid touching them and brief your passengers of this limitation. To clean them, be aware that:
- a) They are glass and should be cleaned only with a clean, lint-free cloth and a mild window cleaner or soap and water
  - b) They are glass and should be cleaned with a clean, lint-free cloth and an eyeglass lens cleaner that is specified as safe for anti-reflective coatings
  - c) They are plastic similar to a laptop computer screen and should be cleaned with the same products as the cockpit windows
  - d) They are anti-reflective polycarbonate which requires a special cleaner and a micro-fiber towel

**CESSNA 172SP Part II**  
**Nav II System (Non-G1000)**

- 21) If the L VAC annunciator light illuminates (other than during self test) and the vacuum gauge reads 4.5" HG, this is an indication:
- a) the vacuum system has failed, use partial panel procedures if in IMC
  - b) the left vacuum pump has failed and the right vacuum pump is operating normally, IFR or VFR flight may be initiated or continued
  - c) the aircraft should be written up and grounded
  - d) both A & C

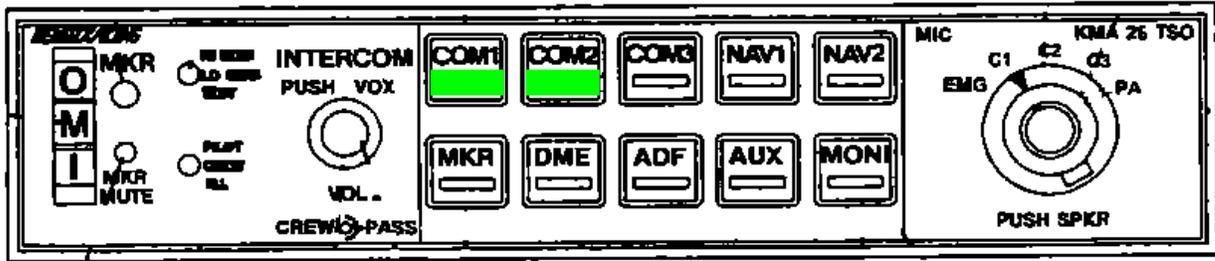
- 22) Regarding the installed anti-collision light systems, which of the statements below is most correct (Day-VFR)
- a) Rotating beacon and strobes if installed, must be functional and operated
  - b) Strobe lights are required to be functional, if installed, but not operated
  - c) Either strobe lights or rotating beacon must be functional & operated
  - d) Neither system is required to operate for Day-VFR

- 23) The following display indicates the navigation radio is in the \_\_\_\_ mode.

122.7	123.00		117.6	030 TO
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- a) active/CDI
  - b) active/bearing
  - c) standby/radial
  - d) active/timer
- 24) You are cruising at 5000' MSL with an altimeter setting of 30.12. The altitude readout in the transponder window is showing 5200 feet. This means:
- a) nothing, the altitude displayed is relative to a baro setting of 29.92
  - b) the altitude encoder is malfunctioning or not communicating with the transponder
  - c) the static system has a leak or blockage, this is a serious condition and immediate action is warranted
  - d) you should determine which altitude source is malfunctioning by comparing to GPS altitude

Given the following display



25) What radios will you hear over the headset?

- a) Comm 1
- b) Comm 2
- c) Comm 3
- d) A & B

26) What radio is set to transmit?

- a) Comm 1
- b) Comm 2
- c) Comm 3
- d) None of the above.

27) Which of the following statements is/are true about the ELT system:

- 1: When activated, the ELT transmits on 121.5 and 243.0 MHz
- 2: The transmitter can be activated automatically or manually
- 3: A cockpit-mounted LED indicates activation whether manual or automatic
- 4: A cockpit-mounted switch can deactivate the ELT

- a) 1 only
- b) 1,2 & 3 only
- c) 2,3,& 4 only
- d) all of the above

28) What modes of the autopilot still function with the loss of the DG (or HSI compass)?

- a) All modes will still function correctly
- b) ROL, NAV, APR and REV
- c) ROL only
- d) No modes will work

29) Which of the following is NOT a limitation when using the GTN 650 GPS for use under IFR:

- a) The pilots guide must be on board and accessible to the pilot
- b) The database must be current for en-route and terminal navigation
- c) The database must be current for approach navigation
- d) The aircraft must have other approved navigation equipment appropriate to the route of flight installed and operational

30) If the GPS650 is in the VLOC mode, what navigation information is being displayed on the VOR?

- a) VOR information from the number 1 VOR
- b) VOR information from the number 2 VOR
- c) GPS information in the approach arm mode
- d) GPS information in the navigation mode only

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