NOTE: Text that should be deleted is displayed with a line through it. New text is shown with a blue background.

If you see any additional content on your knowledge test not represented in our materials or this update, please share this information with Gleim so we can continue to provide the most complete knowledge test preparation experience possible. You can submit feedback at www.gleim.com/AviationQuestions. Thank you in advance for your help!

Study Unit 7 – Aviation Weather

Page 125, Subunit 7.8, Question 34.: This edit corrects wording in the answer explanation.

34. Which conditions result in the formation of frost?

A. The temperature of the collecting surface is at or below freezing when small droplets of moisture fall on the surface.

B. The temperature of the collecting surface is at or below the dewpoint of the adjacent air and the dewpoint is below freezing.

C. The temperature of the surrounding air is at or below freezing when small drops of moisture fall on the collecting surface.

Answer (B) is correct. (AvW Chap 5)

DISCUSSION: Frost forms when both the collecting surface is below the dew point of the adjacent air and the dew point is below freezing. Frost is the direct sublimation deposition of water vapor to ice crystals.

Answer (A) is incorrect. If small droplets of water fall on the collecting surface, which is at or below freezing, ice (not frost) will form. Answer (C) is incorrect. If small droplets of water fall while the surrounding air is at or below freezing, ice (not frost) will form.

Study Unit 9 – Sectional Charts and Airspace

Page 172, Subunit 9.1, Question 20: These edits were made to follow the FAA’s update of the referenced figures.

20. (Refer to Figure 23 on page 173.) (Refer to area 3.) What is the height of the lighted obstacle approximately 6 nautical miles southwest of Savannah International?

A. 4,500 1,498 feet MSL.

B. 1,531 feet AGL.

C. 1,549 1,548 feet MSL.

Answer (C) is correct. (ACL)

DISCUSSION: On Fig. 23, find the lighted obstacle noted by its proximity to Savannah International by being outside the surface area of the Class C airspace, which has a 5-NM radius. It is indicated by the obstacle symbol with arrows or lightning flashes extending from the tip. According to the numbers to the southeast of the symbol, the height of the obstacle is 1,549 1,548 ft. MSL, or 1,534 ft. AGL.

Answer (A) is incorrect. The unlighted tower 8 NM, not 6 NM, southwest of the airport has a height of 1,500 1,498 ft. MSL. Answer (B) is incorrect. An unlighted tower 9 NM, not 6 NM, southwest of the airport has a height of 1,531 ft. AGL.
Page 194, Subunit 9.1, Question 52: This edit was made to correct the airport code.

52. (Refer to Figure 75 on page 195.) The airspace surrounding the Gila Bend AF AUX Airport (GBN GXF) (area 6) is classified as Class [GBN GXF]
   A. B.
   B. C.
   C. D.

Answer (C) is correct. (AIM Chap 3)

DISCUSSION: The GBN GXF airport is surrounded by a dashed blue line, which indicates it is within Class D airspace.

Answer (A) is incorrect. Class B airspace is surrounded by a solid blue line. Answer (B) is incorrect. Class C airspace is surrounded by a solid magenta line.

Page 199, Subunit 9.2, Question 60: This edit was made to clarify and correct the answer explanation.

60. (Refer to Figure 24 below.) Which public use airports depicted are indicated as having fuel?
   A. Commerce (area 6) and Rockwall (area 1).
   B. Rockwall (area 1) and Sulphur Springs (area 5).
   C. Commerce (area 6) and Sulphur Springs (area 5).

Answer (B) is correct. (ACL)

DISCUSSION: On Fig. 24, the requirement is to identify the airports having fuel available. Such airports are designated by small squares extending from the top, bottom, and both sides of the airport symbol. Only Rockwall (area 1) and Sulphur Springs (area 5) have such symbols.

Answer (A) is incorrect. Commerce does not indicate it has fuel. Commerce has a star that indicates it has an airport beacon. Answer (C) is incorrect. Commerce does not indicate it has fuel. Commerce has a star that indicates it has an airport beacon.

Page 202, Subunit 9.3, Question 63: This edit was made to clarify an incorrect answer explanation.

63. (Refer to Figure 22 on page 203 and Figure 31 on page 204.) (Refer to area 2 in Figure 22.) At Coeur D’Alene, which frequency should be used as a Common Traffic Advisory Frequency (CTAF) to self-announce position and intentions?
   A. 122.05 MHz.
   B. 122.1/108.8 MHz.
   C. 122.8 MHz.

Answer (C) is correct. (Chart Supplement)

DISCUSSION: Fig. 31 is the Chart Supplement excerpt for Coeur D'Alene Air Terminal. Look for the section titled Communications. On that same line, it states the CTAF (and UNICOM) frequency is 122.8.

Answer (A) is incorrect. This is the remote communications outlet (RCO) frequency to contact Boise FSS in the vicinity of Coeur D'Alene, not the CTAF. Answer (B) is incorrect. The COE VOR/DME frequency is 108.8, not the CTAF, and 122.1 is not a frequency associated with Coeur D’Alene Airport.

Page 220, Subunit 9.4, Question 83: These edits were made to follow the FAA’s update of the referenced figures.

83. (Refer to Figure 22 below.) (Refer to area 3.) Determine the approximate latitude and longitude of Shoshone County Airport.
   A. 47°02'N – 116°11'W.
   B. 47°33'N – 116°11'W.
   C. 47°32'N – 116°41'W.

Answer (B) is correct. (PHAK Chap 16)

DISCUSSION: Shoshone County Airport (just below area 3) is just west of the 116° line of longitude (find 116° in the 8,000 MSL northwest of Shoshone). There are 60 min. between the 116° line and the 117° line. These are depicted in 1-min. tick marks. Shoshone is 11 tick marks or 11 min. past the 116° line.

Find the labeled 48° latitude just northeast of the 116°. The latitude and longitude lines are presented each 30 min. Since lines of latitude are also divided into 1-min. tick marks, the airport is three tick marks above the 47°30’ line, or 47°33’. The correct latitude and longitude is thus 47°33’N – 116°11’W.

Answer (A) is incorrect. Shoshone Airport is just north of the 47°30’ line of latitude (not 47°00’). Answer (C) is incorrect. Shoshone Airport is 11 tick marks past the 116°00’ line of longitude (not 116°30’).
**Study Unit 14 – Airplane Performance and Weight and Balance**

Page 340, Subunit 14.2, Question 9: This edit was made to clarify the answer explanation.

9. (Refer to Figure 40 on page 341.) Determine the total distance required for takeoff to clear a 50-foot obstacle.

<table>
<thead>
<tr>
<th>OAT</th>
<th>Pressure altitude</th>
<th>Takeoff weight</th>
<th>Headwind component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std</td>
<td>4,000 ft</td>
<td>2,800 lb</td>
</tr>
<tr>
<td></td>
<td>100°F 38°C</td>
<td></td>
<td>Calm</td>
</tr>
</tbody>
</table>

A. 1,500 feet.  
B. 1,750 feet.  
C. 2,000 feet.  

Answer (B) is correct. (PHAK Chap 11)

**DISCUSSION:** The takeoff distance to clear a 50-ft. obstacle is required. Begin on the left side of the graph at standard temperature (as represented by the curved line labeled “ISA”). From the intersection of the standard temperature line and the 4,000-ft. pressure altitude, proceed horizontally to the right to the first reference line, and then move parallel to the closest guideline to 2,800 pounds. From there, proceed horizontally to the right to the third reference line (skip the second reference line because there is no wind), and move equidistantly between the diagonal lines all the way to the far right. You are at 1,750 ft., which is the takeoff distance to clear a 50-ft. obstacle.

Answer (A) is incorrect. The total distance required with a 10-kt. headwind would be 1,500 feet. Answer (C) is incorrect. The total distance required at maximum takeoff weight would be 2,000 feet.

Page 340, Subunit 14.2, Questions 10, 11, and 12: These edits were made to follow the FAA's update of the referenced Figure 40.

10. (Refer to Figure 40 on page 341.) Determine the approximate ground roll distance required for takeoff.

<table>
<thead>
<tr>
<th>OAT</th>
<th>Pressure altitude</th>
<th>Takeoff weight</th>
<th>Headwind component</th>
</tr>
</thead>
<tbody>
<tr>
<td>100°F 38°C</td>
<td>2,000 ft</td>
<td>2,750 lb</td>
<td>Calm</td>
</tr>
</tbody>
</table>

A. 1,150 feet.  
B. 1,300 feet.  
C. 1,800 feet.  

Answer (A) is correct. (PHAK Chap 11)

**DISCUSSION:** Begin on the left section of Fig. 40 at 100°F 38°C (see outside air temperature at the bottom). Move up vertically to the pressure altitude of 2,000 feet. Then proceed horizontally to the right to the first reference line. Since takeoff weight is 2,750 lb., move parallel to the closest guideline, to 2,750 pounds. Then proceed horizontally to the second reference line. Since the wind is calm, proceed again horizontally to the right-hand margin of the diagram (ignore the third reference line because there is no obstacle; i.e., ground roll is desired), which will be at 1,150 feet.

Answer (B) is incorrect. The ground roll distance required at maximum takeoff weight would be 1,300 feet. Answer (C) is incorrect. The total distance required to clear a 50-ft. obstacle would be 1,800 feet.

11. (Refer to Figure 40 on page 341.) Determine the approximate ground roll distance required for takeoff.

<table>
<thead>
<tr>
<th>OAT</th>
<th>Pressure altitude</th>
<th>Takeoff weight</th>
<th>Headwind component</th>
</tr>
</thead>
<tbody>
<tr>
<td>90°F 32°C</td>
<td>2,000 ft</td>
<td>2,500 lb</td>
<td>20 kts</td>
</tr>
</tbody>
</table>

A. 650 feet.  
B. 850 feet.  
C. 1,000 feet.  

Answer (A) is correct. (PHAK Chap 11)

**DISCUSSION:** Begin with the intersection of the 2,000-ft. pressure altitude curve and 90°F 32°C in the left section of Fig. 40. Move horizontally to the right to the first reference line, then parallel to the closest guideline to 2,500 pounds. Next, move horizontally to the right to the second reference line, then parallel to the closest guideline to the right to 20 knots. Finally, move horizontally to the right directly to the right margin because there is no obstacle clearance. You should end up at about 650 ft., which is the required ground roll when there is no obstacle to clear.

Answer (B) is incorrect. The ground roll distance required if the wind were calm would be 850 feet. Answer (C) is incorrect. The ground roll distance required at maximum takeoff weight would be 1,000 feet.
12. (Refer to Figure 40 on page 341.) Determine the total distance required for takeoff to clear a 50-foot obstacle.

**DISCUSSION:** Begin in the left section of Fig. 40 by finding the intersection of the sea-level pressure altitude and standard temperature (59°F or 15°C) and proceed horizontally to the right to the first reference line. Then proceed parallel to the closest guideline to 2,700 pounds. From there, proceed horizontally to the right to the third reference line. You skip the second reference line because the wind is calm. Then proceed upward, parallel to the closest guideline to the far right side. To clear the 50-ft. obstacle, you need a takeoff distance of about 1,400 feet.

Answer (B) is correct. (PHAK Chap 11)

Answer (A) is incorrect. The total distance required at 2,200-lb. takeoff weight would be 1,000 feet. Answer (C) is incorrect. The total distance required at maximum takeoff weight would be 1,700 feet.

OAT .................................................. Std
Pressure altitude ................................. Sea level
Takeoff weight ................................. 2,700 lb
Headwind component ......................... Calm

A. 1,000 feet.
B. 1,400 feet.
C. 1,700 feet.