

### DLOC Topic 3 Lesson 1: Practice Exercise #6

*Directions: Choose the lettered answer that best completes the question. There is only one correct answer for each question unless indicated otherwise.*

1. Match the given characteristics with the correct VCP. There may be more than one answer for each VCP.

VCP 11 \_\_\_\_\_ VCP 12 \_\_\_\_\_ VCP 21 \_\_\_\_\_  
VCP 31 \_\_\_\_\_ VCP 32 \_\_\_\_\_ VCP 121 \_\_\_\_\_  
VCP 211 \_\_\_\_\_ VCP 212 \_\_\_\_\_ VCP 221 \_\_\_\_\_

- a. Part of the Convective group of VCPs
- b. Part of the Shallow Precipitation group of VCPs
- c. Part of the Clear Air group of VCPs
- d. Part of the Range Folding Mitigation group of VCPs
- e. Transmits short pulses
- f. Transmits long pulses
- g. Uses more than one CD rotation at the same elevation angle
- h. The Doppler PRFs are editable for any elevation angle below 7 degrees
- i. Doppler scans at elevations 1.45 degrees and below have exactly 64 pulses per radial

2. Which VCP produces the greatest statistical accuracy of the base data?

- a. VCP 11
- b. VCP 12
- c. VCP 21
- d. VCP 31
- e. VCP 32
- f. VCP 121
- g. VCP 211
- h. VCP 212
- i. VCP221

3. Match the given characteristics with the correct WSR-88D waveform. There may be more than one answer for each waveform.

Batch (B) \_\_\_\_\_  
Contiguous Doppler X (CDX) \_\_\_\_\_  
Contiguous Surveillance (CS) \_\_\_\_\_  
Contiguous Doppler (CD) \_\_\_\_\_  
SZ-2 Contiguous Surveillance (SZCS) \_\_\_\_\_

SZ-2 Contiguous Doppler (SZCD) \_\_\_\_\_  
Split Cut (CS/CD) \_\_\_\_\_

- a. Produces the best quality velocity information at the expense of a short  $R_{\max}$ .
- b. Produces the best quality returned power and range information at the expense of a low  $V_{\max}$ .
- c. Transmits a high PRF for the entire  $360^\circ$  sweep.
- d. Transmits a low PRF for the entire  $360^\circ$  sweep.
- e. Used for multiple rotations at the same elevation angle to support the MPDA (VCP 121).
- f. Transmits at a low PRF and then switches to a high PRF for each  $1^\circ$  wide sweep.
- g. Transmits at a high PRF to collect both target reflectivity and velocity data on higher elevation slices.
- h. Employed at lower elevation angles where multiple trip echoes are most likely to occur.

4. Consider the characteristics of VCP 21 when the WSR-88D is scanning in Batch (B) mode at  $6.0^\circ$  elevation. To collect surveillance data, PRF# \_\_\_\_\_ is used and \_\_\_\_\_ pulses per radial are transmitted.

- a. 1, 28
- b. 2, 8
- c. 3, 12
- d. 5, 70

5. Consider the characteristics of VCP 32 when the WSR-88D is scanning in Contiguous Doppler (CD) mode at  $1.5^\circ$ . The default PRF # is \_\_\_\_\_ and \_\_\_\_\_ pulses per radial are transmitted.

- a. 5, 220
- b. 6, 238
- c. 7, 256
- d. 8, 278

6. If a WSR-88D is operating in VCP 32, using Delta PRI table #3, and is collecting velocity data at  $1.5^\circ$  elevation, then \_\_\_\_\_ pulses would be transmitted per radial and  $V_{\max}$  would be approximately \_\_\_\_\_ kt for the default values.

- a. 220, 79
- b. 1013.51, 79
- c. 220, 48.7
- d. 1013.51, 48.7

7. Your WSR-88D radar is operating in VCP 11 and scanning with an elevation angle that uses the CDX waveform. A thunderstorm located at a range of 95 nm with a top of 65,000 ft will

- a. not be range folded.
- b. be range folded (i.e., "second trip echo).
- c. be detected but placed at the proper range.
- d. not be detected at this elevation angle.

8. Your WSR-88D is operating in VCP 212 and you notice a rotating supercell is 10 minutes away from crossing the range of the first trip at the 0.5 and 0.9, and 1.3 degree tilts. The storm has had a history of tornadoes and looks to continue that way, but you will lose velocity data in the lowest 3 tilts as it crosses the first trip. What is probably your best course of action?

- a. Do nothing and remain in VCP 212
- b. Edit the PRF of the 0.5, 0.9, and 1.3 degree tilts, making the  $R_{\max}$  further out
- c. Switch to VCP 12 as soon as possible, edit the PRF if necessary
- d. Switch to VCP 21