**Chapter 4**

**Finding Your Location with the Global Positioning System**

1. The general term, used in everyday conversation, for a technology that uses signals broadcast from satellites to determine position and navigation on Earth is:

 a. space segment.

 b. P code.

 c. GPS.

 d. Galileo.

2. GPS is a “public domain” good in that it is free and available to everyone worldwide.

 a. True

 b. False

3. The original developer of NAVSTAR GPS was which country’s Department of Defense?

 a. China

 b. Russia

 c. Israel

 d. the United States

4. In which year was the first GPS satellite launched?

 a. 1950

 b. 1964

 c. 1978

 d. 1982

5. Which of the following is NOT one of the three main/cooperating segments of GPS?

 a. user segment

 b. space segment

 c. position segment

 d. control segment

6. What is the minimum number of satellites required for a constellation?

 a. 6

 b. 12

 c. 24

 d. 48

7. GPS satellites make \_\_\_\_\_\_ orbits around Earth each day.

 a. 2

 b. 4

 c. 12

 d. 24

8. The average person can receive information from L1 and L2 frequencies when he or she is indoors.

 a. True

 b. False

9. The control segment of the GPS system is composed of a series of:

 a. satellites.

 b. ground stations.

 c. astronomical observatories.

 d. air force bases.

10. Users of GPS on the ground can send information back to satellites orbiting Earth.

 a. True

 b. False

11. All users of GPS on Earth can pick up the L1 frequency.

a. True

b. False

12. The signals containing information about the satellite’s status, orbit, and location are collectively referred to as the:

 a. almanac.

 b. reference point.

 c. P code.

 d. Y code.

13. A military receiver is required to pick up P code.

a. True

b. False

14. Which of the following is the most highly encrypted and secure?

 a. the L1 frequency

 b. C/A code

 c. P code

 d. Y code

15. Transmission time (t) multiplied by the speed of light (c) gives you the:

 a. trilateration point.

 b. pseudorange between receiver and satellite.

 c. almanac.

 d. bit rate per millisecond.

16. How many points of reference are required for you to find your exact location on Earth?

 a. one

 b. two

 c. three

 d. four

17. GPS satellites have atomic clocks, whereas typical GPS receivers have inexpensive quartz clocks.

 a. True

 b. False

18. All of the following help to explain why GPS isn’t perfectly accurate, EXCEPT:

 a. the U.S. Department of Defense currently uses Selective Availability in the interest of national defense.

 b. a poor geometric arrangement of satellites.

 c. atmospheric interference in the ionosphere and troposphere.

 d. the multipath effect.

19. The original goal of SA was to make the C/A (coarse acquisition) code on the L1 frequency more accurate.

a. True

b. False

20. Ephemeris errors typically introduce \_\_\_\_\_\_\_\_\_\_ or so of error.

a. 3 feet

b. 2 meters

c. 1 mile

d. 2.5 kilometers

21. The cause of PDOP errors is a less-than-ideal arrangement of satellites in space.

a. True

b. False

22. Which of the following does not represent an attempt to make GPS more accurate?

 a. NDGPS

 b. CORS

 c. PDOP

 d. SBAS

23. The European Union’s version of GPS is known as:

 a. MSAS.

 b. Compass.

 c. GLONASS.

 d. Galileo.

24. GLONASS is the GPS system developed by:

 a. Poland.

 b. Russia.

 c. China.

 d. India.

25. The process of hiding small objects in an area, then listing their coordinates on the Web in a form of “treasure hunting” is known as:

 a. ephemera.

 b. constellating.

 c. geocaching.

 d. trilaterating.