

## **SUPPLEMENTAL HOMEWORK QUESTIONS FOR THE MARINE ELECTRONICS COURSE 97**

The following 31 questions should be considered supplemental homework questions for the Marine Electronics Course 97. These questions are in addition to those homework questions provided in the student manual and are presented here to assist the student in preparing for the examination of this course.

1. Determine the power drawn in a circuit operating from a 12-volt battery with a resistance of 10 ohms.
  - a. 1.2 watts
  - b. 12 watts
  - c. 14.4 watts
  - d. 144 watts
  
2. When using a voltmeter, the leads should be placed:
  - a. in series with the load.
  - b. across the circuit (parallel) being tested.
  - c. in the direction with current flow.
  - d. in the opposite direction of current flow.
  
3. Conductance is a measure of:
  - a. current.
  - b. voltage.
  - c. reciprocal of resistance.
  - d. power.
  
4. The flow of current in an electrical circuit increases as the circuit resistance decreases.
  - a. True
  - b. False
  
5. Rapid loss of water in a single cell may indicate:
  - a. spillage of baking soda water in the cell during cleaning.
  - b. need for improved battery ventilation.
  - c. a bad cell and time to find a replacement battery.
  - d. an overcharging regulator.
  
6. Rapid loss of water in all cells may indicate:
  - a. spillage of baking soda water in the cell after cleaning.
  - b. need for improved battery ventilation.
  - c. a bad cell and time to find a replacement battery.
  - d. an overcharging regulator.

7. No galvanic action will occur between differing metals immersed in seawater if:
  - a. the relative area of the less noble metal is greater in relation to the noble metal.
  - b. they are painted.
  - c. they are not electrically interconnected.
  - d. a galvanic isolator is installed.
  
8. If a graphite motor brush (potential of + 0.20 volts) was immersed in salt water near an aluminum wire (potential of - 0.75 volts), the voltage between them would read:
  - a. zero.
  - b. 0.95 volts.
  - c. 1.25 volts.
  - d. 2.75 volts
  
9. For added protection as a storm approaches, all necessary electronic equipment should be disconnected from power connections, antennas, and through hull sensors/transducers.
  - a. True
  - b. False
  
10. One kilohertz is:
  - a. 1 thousand Hertz.
  - b. 1 million Hertz.
  - c. 1/1000 GHz.
  - d. 1,000 KHz.
  
11. "FCC Type Approval" means that:
  - a. the FCC has determined the equipment complies with all FCC Rules & Regulations.
  - b. the equipment has a high reliability rating.
  - c. the radio transmitter provides the full specified output power.
  - d. the radio receiver has a very good sensitivity and selectivity.
  
12. The transceiver may share circuitry between its transmitter and receiver and:
  - a. has separate switches to change from transmitter to receive operation.
  - b. uses a single switch to transfer from receive to transmit.
  - c. must use separate antennas for receive and transmit.
  - d. has less power than a stand-alone transmitter.
  
13. Weather channels (WX-1, WX-2, etc.) are found in the AM broadcast band.
  - a. True.
  - B. False.

14. To maintain the resonant conditions as the frequency increases, the physical length of a dipole antenna must:
  - a. increase.
  - b. decrease.
  - c. remain the same.
  - d. change proportionally upward.
  
15. The postings of a ship's licenses are no longer required.
  - a. True
  - b. False
  
16. In the event of a MAYDAY situation, you may legally use any type of equipment to communicate your emergency.
  - a. True
  - b. False
  
17. The preferred EPIRB frequency for new installations is \_\_\_\_\_MHz because the equipment that operates on that frequency transmits the most detailed information about the vessel in distress.
  - a. 121.5 MHz.
  - b. 243.0 MHz.
  - c. 406 MHz.
  - d. 2182 KHz.
  
18. DSC stands for:
  - a. Differential Selective Calling.
  - b. Distress Special Communication.
  - c. Digital Selective Calling.
  - d. Distress and Safety Communication.
  
19. The Federal Radionavigation Plan (FRP-99) recognizes what four phases of marine navigation?
  - a. Rivers, Lakes, Coastal, Oceans.
  - b. Inland Waterways, Harbor/Harbor Approach, Coastal, Oceans.
  - c. Radar, Loran-C, GPS, RDF.
  - d. Active, Passive, Satellite, Celestial.
  
20. To perform maintenance or repair on a depth sounder, the technician needs:
  - a. General Radiotelephone Operator's License.
  - b. Marine Radio Operator's Permit.
  - c. Restricted Operator's Permit.
  - d. no license.

21. A radar's \_\_\_\_\_ defines range resolution while \_\_\_\_\_ defines bearing resolution.
- pulse duration, antenna scan rate.
  - pulse duration, radiated horizontal beam width.
  - pulse repetition frequency (PRF), pulse duration.
  - pulse repetition frequency (PRF), radiated vertical antenna scan.
22. Radar may be used in collision avoidance. The plotting of another ship's relative speed and bearing provides valuable information. Assuming the other ship is off your starboard side, if the range to a radar target is decreasing while the relative bearing remains constant, your vessel:
- is proceeding on a course as it is the privileged vessel.
  - is on a collision course with the target.
  - will pass ahead of the other ship.
  - will pass astern of the other ship.
23. Loran-C operates in the \_\_\_\_\_ band.
- low frequency (LF).
  - Medium frequency (MF).
  - AM broadcast.
  - VHF frequency.
24. Loran-C offers worldwide coverage from a master station in Seneca, NY.
- True
  - False
25. Loran-C signals travel most predictably in:
- hot, dry climates.
  - the presence of nearby cold fronts and thunderstorms.
  - warm summer nights with steady rain.
  - cool, clear weather.
26. For a GPS receiver to establish a fix it can take as long as 30 minutes for a "cold start" or less than one minute for a "warm start".
- True
  - False
27. A modern remote-reading compass can be integrated into related control systems and:
- provides only for analog readout.
  - can provide either analog or digital readout.
  - provides for digital readout.
  - is not compatible with autopilot steering equipment.
28. Electronic charts may be of either raster or vector format.
- True
  - False

29. A data bus system can process and display not only boat speed and wind data, but also temperature, barometric pressure, and compass information.
- True
  - False
30. U.S. Government NOS raster-scanned electronic charts are commonly obtained via:
- floppy disks or CD-ROMs.
  - EPROMs.
  - electronic chips.
  - are easily downloaded over the Internet directly to your on-board computer.
31. An automatic pilot consists of what three basic units?
- control unit, power supply, display unit.
  - direction finder, drive unit, rudder angle indicator.
  - heading sensor, control unit, drive unit.
  - differential steering unit, power supply, scanner.