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Continuing Education Course #606
Shipboard Installations & Design
Electrical Short Course

1. What part of the IEEE 45 Series covers Safety?
 - a. 45.1
 - b. 45.5
 - c. 45.7
 - d. 45.8

2. What is an allowable total voltage drop per IEC 60038 (and the NEC)?
 - a. 2%
 - b. 3%
 - c. 4%
 - d. 5%

3. Which of the following is a classification society ?
 - a. American Bureau of Shipping
 - b. Communist Classification Society
 - c. England Shipping Society
 - d. International Classification Society

4. What is low AC voltage according to the IEC?
 - a. <30 V
 - b. 50 V – 1000 V
 - c. 50 V – 100 V
 - d. 120 V – 1000 V

5. What is the magnitude capacitive reactance for a 50 mF capacitor in a 60 Hz circuit?
 - a. 0.003
 - b. 0.053
 - c. 0.106
 - d. 0.167

6. What is the utilization (load) voltage for a 120 V standard AC voltage?
 - a. 115 V
 - b. 120 V
 - c. 208 V
 - d. 230 V

7. What is the range of frequencies expected for a 60 Hz system given the standard frequency tolerance?
 - a. 58.2 Hz to 61.8 Hz
 - b. 59.0 Hz to 61.0 Hz

- c. 59.5 Hz to 60.5 Hz
- d. 57.6 Hz to 62.4 Hz

8. What is the term for the time it takes to reconfigure a distribution system without bringing on additional generating capacity per QoS?

- a. t1
- b. t2
- c. t distribution
- d. depends on human operator response

9. What is the maximum pitch switchgear should be able to stand, i.e., operate normally?

- a. 7.5°
- b. 10°
- c. 22.5°
- d. 45°

10. What is the term for loads that communicate with "power system control"?

- a. communicating load
- b. controlled load
- c. shedding load
- d. vital load

11. When one generator is lost (the largest), the remaining generator capacity at ___ must supply all uninterruptible and short-term-interruptible loads.

- a. 5%
- b. 50%
- c. 95%
- d. 100%

12. What load should generators be designed to carry?

- a. N minus 1
- b. 95% + 5% Cycling
- c. 100%
- d. 110%

13. How long after a loss of normal power should it take an emergency generator to start up and be capable of carrying the full rated load?

- a. 10 s
- b. 45 s
- c. 60 s
- d. depends on ship size

14. An ocean going passenger vessel over 1600 gross tons should have emergency power capable of lasting ___ hours.

- a. 8
- b. 12
- c. 18
- d. 36

15. What is most nearly the minimum shaft power (kW) for a prime mover power a 2000 kW generator with a 95% efficiency?

- a. 1900 kW
- b. 2000 kW
- c. 2095 kW
- d. 2105 kW

16. What prime mover speed is required for a two-pole generator meant to put out 60 Hz power?

- a. 1800 rpm
- b. 3000 rpm
- c. 3600 rpm
- d. 6000 rpm

17. What minimum power (kW) should galley conductors be designed for if the total galley load design is 200 kW?

- a. 100 kW
- b. 130 kW
- c. 150 kW
- d. 200 kW

18. What is the approximate design conductor rating (in kW) for a 100 hp motor?

- a. 94 kW
- b. 746 kW
- c. 750 kW
- d. 100 kW

19. What sound power circuit would a captain use to talk to the machinery space (where the engines are located)?

- a. 2JV
- b. 1JV
- c. EJV
- d. MJV

20. What is the limit for the number of circuits (branches) on single-phase power distribution panel?

- a. 10
- b. 12
- c. 18
- d. 26

21. One battery cycle is defined as the removal of ___% of the battery capacity.

- a. 10
- b. 50
- c. 80
- d. 100

22. The load supervisory control system should be designed for how much future growth?

- a. 5%
- b. 10%
- c. 20%
- d. 50%

23. Three-phase motors are designed to handle five to six times their rated horsepower. To what locked rotor code does six times the horsepower rating correspond?

- a. A
- b. D

- c. F
- d. G

24. Prior to the completion of a protection study, what is the maximum asymmetrical current that may be assumed? (Judged against the generator full load current.)

- a. 5
- b. 6
- c. 8
- d. 10

25. What study is considered as defining the power system?

- a. Load Flow & Voltage Drop Analysis
- b. Fault Current Analysis
- c. Transient Analysis
- d. Dynamic Analysis

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