edcetera engineering

Final Exam
Continuing Education Course #530
Electrical Power
Part I: Generation

1. The efficiency of a thermodynamic cycle depends on the temperature difference between the _____ and the sink.
- a. combustion
- b. condenser
- c. source
- d. turbine

2. What is the term used when steam temperature is raised above the saturation temperature for the associated pressure?
- a. excess heating
- b. extra heating
- c. superheating
- d. waste heat

3. What type of process is represented by the cycle shown?
- a. Rankine cycle
- b. reheat cycle
- c. Stirling cycle
- d. thermodynamic cycle

4. Superheating, reheating, and regeneration are all used to raise the mean effective temperature at which heat is added.
- a. regeneration
- b. reheating
- c. superheating
- d. B and C

5. What source of power essentially operates without depleting "fuel"?
- a. BWR
- b. Cogeneration Plants
- c. Hydroelectric Power
- d. PWR

6. What type of turbine use stationary nozzles that drop the pressure with the kinetic energy absorbed in rotating blades operating at approximately constant pressure?
- a. Curtis
- b. Impulse
- c. Rateau
- d. Reaction

7. What type of turbine drop pressure in both the stationary and rotating portions?

○ a. Curtis
○ b. Impulse
○ c. Rateau
○ d. Reaction

8. A "conductor" moving through a magnetic field experiences a _____.
○ a. counter current
○ b. generator action
○ c. induced force
○ d. resistive current

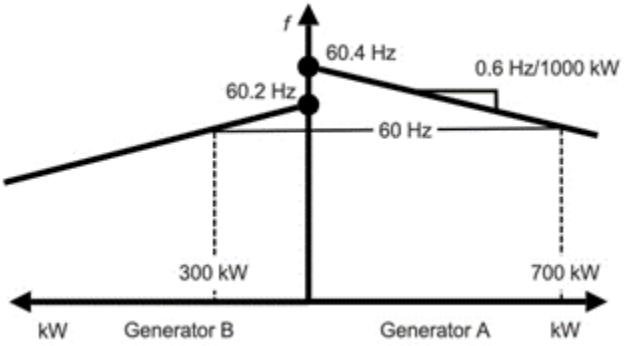
9. Voltage is inducted in the _____.
○ a. armature
○ b. field
○ c. motor
○ d. rotor

10. Alternating current generators have a *field* located on the _____.
○ a. armature
○ b. motor
○ c. rotor
○ d. stator

11. Which requirement for paralleling AC generators is set during construction/fabrication/installation?
○ a. frequency matching
○ b. load division set
○ c. matching voltage
○ d. phase sequence

12. What is the normal phase sequency of a generator?
○ a. a-b-c
○ b. c-b-a
○ c. b-a-c
○ d. as desired

13. For the load diagram, the following parameters initially exist as shown. Generator A is meant to carry all the load. The frequency droop on each machine is identical.

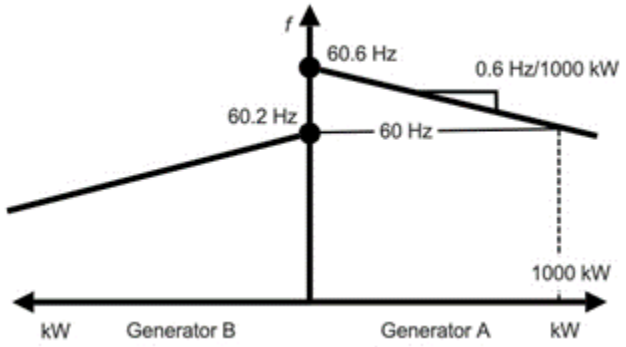


What is most nearly the no-load frequency setpoint required on Generator A in order for Generator A carry all the load, while keeping the system frequency at 60 Hz?

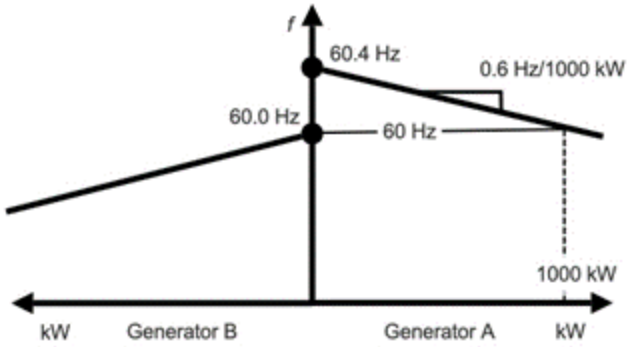
○ a. 60 Hz
○ b. 60.2 Hz
○ c. 60.4 Hz
○ d. 60.6 Hz

14. Which of the following house diagrams shows Generator A carry the entire load of 1000 kW?

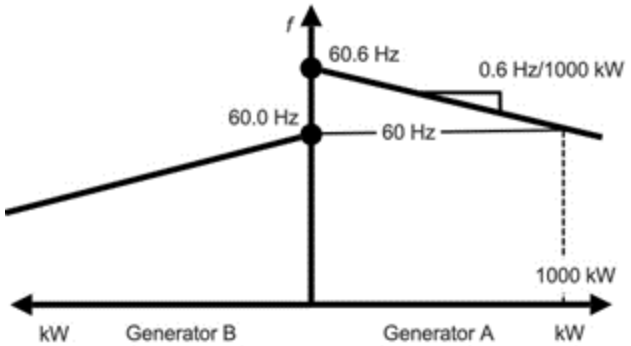
○ a.



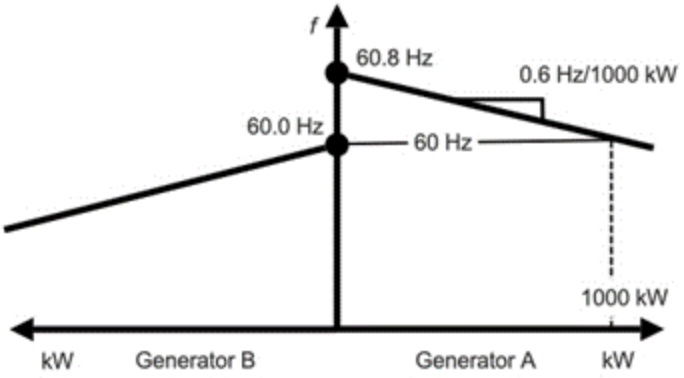
○ b.



○ c.



○ d.



15. Real load sharing is controlled by the _____ of the generator.
- a. regulator
- b. setpoint
- c. speed
- d. voltage

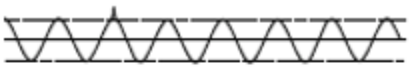
16. Reactive load sharing is controlled by the _____ of the generator.
- a. regulator
- b. setpoint
- c. speed
- d. voltage

17. The field of a DC generator is located on the _____.
- a. external
- b. rotor
- c. stator
- d. either stator or rotor

18. Commutation is the process of reversal of current in the armature windings of a DC generator.
- a. neutral plane
- b. depends upon the design
- c. opposite the neutral plane
- d. equally distance from the north and south fields

19. What figure shows a voltage surge?

1



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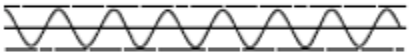

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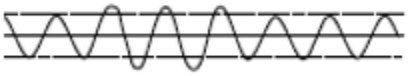

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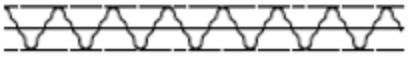
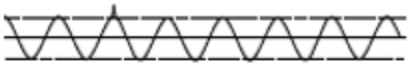


○ a. 1
○ b. 2
○ c. 3
○ d. 4

20. What figure shows a harmonic disturbance?

1



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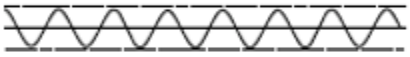

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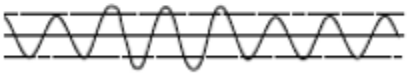

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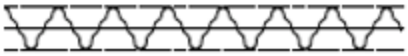

○ a. 1
○ b. 2
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