

## QUIZ – ANSWER KEY

QUIZ NO: 146

TOPIC: ELECTRICAL ENGINEERING

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1. AC voltage controllers convert ?

- [A] fixed ac to fixed dc
- [B] variable ac to variable dc
- [C] fixed ac to variable ac
- [D] variable ac to fixed ac

**Answer: C**

**Explanation:** Voltage controllers convert the fixed ac voltage to variable ac by changing the values of the firing angle.

2. In AC voltage controllers the ?

- [A] variable ac with fixed frequency is obtained
- [B] variable ac with variable frequency is obtained
- [C] variable dc with fixed frequency is obtained
- [D] variable dc with variable frequency is obtained

**Answer: A**

**Explanation:** Voltage controllers convert the fixed ac voltage to variable ac by changing the values of the firing angle. The available ac obtained has the same fixed frequency as the input ac.

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3. Earlier than the semiconductor technology, \_\_\_\_\_ devices were used for voltage control applications ?

- [A] cycloconverters
- [B] vacuum tubes
- [C] tap changing transformer
- [D] induction machine

**Answer: C**

**Explanation:**

A tap changing transformer can give variable ac from fixed ac without a change in frequency.

4. The AC voltage controllers are used in \_\_\_\_\_ applications ?

- [A] power generation
- [B] electric heating
- [C] conveyor belt motion
- [D] power transmission

**Answer: B**

**Explanation:** In electric heating, variable ac supply is needed. The devices are fired appropriately to apply enough temperature.

5. In the principle of phase control ?

- [A] the load is on for some cycles and off for some cycles
- [B] control is achieved by adjusting the firing angle of the devices
- [C] control is achieved by adjusting the number of on off cycles
- [D] control cannot be achieved

**Answer: B**

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**Explanation:** Switching devices is so operated that the load gets connected to ac source for a part of each half cycle.

6. A single-phase half wave voltage controller consists of ?

- [A] one SCR is parallel with one diode
- [B] one SCR is anti parallel with one diode
- [C] two SCRs in parallel
- [D] two SCRs in anti parallel

**Answer: B**

**Explanation:** As it is half wave, it consists of one SCR ( the control element) in anti parallel with one diode.

7. Induction heating is a \_\_\_\_\_ type of heating ?

- [A] zero frequency
- [B] high frequency
- [C] power frequency
- [D] none of the mentioned

**Answer: B**

**Explanation:** As eddy current is proportional to the square of the supply frequency, induction heating is a high frequency heating.

8. The factors governing the induction heating are ?

- [A] resistivity
- [B] relative permeability
- [C] magnetic field intensity
- [D] all of the mentioned

**Answer: D**

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**Explanation:** Induction heating depends on all of the above given factors.

9. For a SCR, conduction angle is  $120^\circ$  when average on-state current is 20 A. When the conduction angle is halved the earlier value, the on-state average current will be?

- [A] 5 A
- [B] 40 A
- [C] 10 A
- [D] 20 A

**Answer: B**

**Explanation:** When the conduction angle is halved, the device will conduct twice then it was conducting earlier. Hence,  $I = 2 \times 20 = 40$  A.

10. TRIAC is used in ?

- [A] chopper
- [B] speed control of induction machine
- [C] speed control of universal motor
- [D] none of the mentioned

**Answer: C**

**Explanation:** TRIAC is used in speed control of universal motor.

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