

## QUIZ – ANSWER KEY

QUIZ NO: 122

TOPIC: ELECTRICAL ENGINEERING

DATE: 14/11/2022

1. The load voltage of a chopper can be controlled by varying the ?

- [A] duty cycle
- [B] firing angle
- [C] reactor position
- [D] extinction angle

**Answer: A**

2. The values of duty cycle ( $\alpha$ ) lies between \_\_\_\_\_ ?

- [A]  $0 < \alpha < 1$
- [B]  $0 > \alpha > -1$
- [C]  $0 \leq \alpha \leq 1$
- [D]  $1 < \alpha < 100$

**Answer: C**

3. A chopper is a ?

- [A] Time ratio controller

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- [B] AC to DC converter
- [C] DC transformer
- [D] High speed semiconductor switch

**Answer: D**

4. Which device can be used in a chopper circuit ?

- [A] BJT
- [B] MOSFET
- [C] GTO
- [D] All of the mentioned

**Answer: D**

5. A chopper may be thought as a \_\_\_\_\_ ?

- [A] Inverter with DC input
- [B] DC equivalent of an AC transformer
- [C] Diode rectifier
- [D] DC equivalent of an induction motor

**Answer: B**

6. Choppers convert ?

- [A] AC to DC
- [B] DC to AC
- [C] DC to DC
- [D] AC to AC

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**Answer: C**

7. In the \_\_\_\_\_ type of chopper, two stage conversions takes place\_\_\_\_\_?
- [A] AC-DC
  - [B] AC link
  - [C] DC link
  - [D] none of the above

**Answer: B**

8. In a step down chopper, if  $V_s = 100\text{ V}$  and the chopper is operated at a duty cycle of 75 %. Find the output voltage \_\_\_\_\_?
- [A] 100 V
  - [B] 75 V
  - [C] 25 V
  - [D] None of the mentioned

**Answer: B**

**Explanation:**  $V_o = \text{Duty cycle} \times V_s = 0.75 \times 100 = 75\text{ V}$ .

9. Find the expression for output voltage for a step-up chopper, assume linear variation of load current and  $\alpha$  as the duty cycle \_\_\_\_\_?
- [A]  $V_s$
  - [B]  $V_s/\alpha$
  - [C]  $V_s/(1-\alpha)$
  - [D]  $V_s/\sqrt{2}$

**Answer: C**

**Explanation:**

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10. Find the output voltage for a step-up chopper when it is operated at a duty cycle of 50 % and  $V_s = 240$  V ?

[A] 240 V

[B] 480 V

[C] 560 V

[D] 120 V

**Answer: B**

**Explanation:**  $V_o = V_s/1-\alpha$ .

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