

General Class Study Group Chapter 7 Practical circuits

One questions from this chapter will be on the test.

Manual pages 1 to 5

G6A09

1. A half-wave rectifier conducts during how many degrees of each cycle?
- A. 90 degrees
 - B. 180 degrees
 - C. 270 degrees
 - D. 360 degrees

G6A10

2. A full-wave rectifier conducts during how many degrees of each cycle?
- A. 90 degrees
 - B. 180 degrees
 - C. 270 degrees
 - D. 360 degrees

G6A11

3. When two or more diodes are connected in parallel to increase the current handling capacity of a power supply, what is the purpose of the resistor connected in series with each diode?
- A. The resistors ensure the thermal stability of the power supply
 - B. The resistors regulate the power supply output voltage
 - C. The resistors ensure that one diode doesn't take most of the current
 - D. The resistors act as swamping resistors in the circuit

G7A03

4. What should be the minimum peak-inverse-voltage rating of the rectifier in a full-wave power supply?
- A. One-quarter the normal output voltage of the power supply
 - B. Half the normal output voltage of the power supply
 - C. Double the normal peak output voltage of the power supply
 - D. Equal to the normal output voltage of the power supply

G7A04

5. What should be the minimum peak-inverse-voltage rating of the rectifier in a half-wave power supply?
- A. One-quarter to one-half the normal peak output voltage of the power supply
 - B. Half the normal output voltage of the power supply
 - C. Equal to the normal output voltage of the power supply
 - D. One to two times the normal peak output voltage of the power supply

Manual pages 6 and 7

G6A08

6. What is the output waveform of an unfiltered full-wave rectifier connected to a resistive load?
- A. A series of pulses at twice the frequency of the AC input
 - B. A series of pulses at the same frequency as the AC input
 - C. A sine wave at half the frequency of the AC input
 - D. A steady DC voltage

G7A01

7. What safety feature does a power-supply bleeder resistor provide?
- A. It does not affect voltage regulation
 - B. It discharges the filter capacitors
 - C. It removes shock hazards from the induction coils
 - D. It eliminates ground-loop current

G7A02

8. What components are used in a power-supply filter network?
- A. Diodes
 - B. Transformers and transistors
 - C. Quartz crystals
 - D. Capacitors and inductors

Manual pages 7 to 9

G7A10

9. What type of power supply circuit is often used to provide overvoltage protection at its output?
- A. Crowbar
 - B. Circuit breaker
 - C. Ferrite transformer
 - D. Buck-out transistor

G7A11

10. What type of capacitors should be used to filter the rectified DC output of a switching power supply?
- A. Capacitors with low equivalent series resistance
 - B. Ordinary, large value electrolytic capacitors
 - C. NPO-type ceramic disc or silver mica capacitors
 - D. Capacitors with high equivalent series inductance

G7A12

11. Which of the following is an advantage of a switched-mode power supply as compared to a linear power supply?
- A. Higher output voltages are possible with the switched-mode supply
 - B. Fewer circuit components are required for the switched-mode supply
 - C. The relatively high frequency power oscillator allows the use of small, lightweight and low-cost transformers in the switched-mode supply
 - D. All of these choices are correct

G7A13

12. In a switched-mode power supply, what is the first step in converting the 120 volt AC input voltage to a 12 volt DC output voltage?

- A. The 120 volt AC is first rectified and filtered
- B. The 120 volt AC is first converted to 12 volt AC with a transformer
- C. The 120 volt AC is switched off when the waveform exceeds 12 volts, and is switched on again when the waveform drops below 12 volts
- D. An AC clamp is used to limit the input signal to no more than 20 volts DC

Manual pages 9 to 11

G7A05

13. What should be the impedance of a low-pass filter as compared to the impedance of the transmission line into which it is inserted?

- A. Substantially higher
- B. About the same
- C. Substantially lower
- D. Twice the transmission line impedance

Manual pages 11 and 12

G7A06

14. In a typical single-sideband phone transmitter, what circuit processes signals from the balanced modulator and sends signals to the mixer?

- A. Carrier oscillator
- B. Filter
- C. IF amplifier
- D. RF amplifier

G7A07

15. In a single-sideband phone transmitter, what circuit processes signals from the carrier oscillator and the speech amplifier and sends signals to the filter?

- A. Mixer
- B. Detector
- C. IF amplifier
- D. Balanced modulator

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G7A08

16. In a single-sideband phone superheterodyne receiver, what circuit processes signals from the RF amplifier and the local oscillator and sends signals to the IF filter?

- A. Balanced modulator
- B. IF amplifier
- C. Mixer
- D. Detector

G7A09

17. In a single-sideband phone superheterodyne receiver, what circuit processes signals from the IF amplifier and the BFO and sends signals to the AF amplifier?

- A. RF oscillator
- B. IF filter
- C. Balanced modulator
- D. Detector