MALVINO

1. If N1/N2 = 2, and the primary voltage is 120 V, what is
the secondary voltage?
a. 0 V
b. 36 V
c. 60 V
d. 240 V

2. A transformer has a turns ratio of 4: 1. What is the peak
secondary voltage if 115 V rms is applied to the primary
winding?
a. 40.7 V
b. 64.6 V
c. 163 V
d. 650 V

3. Line voltage may be from 105 V rms to 125 rms in a halfwave
rectifier. With a 5:1 step-down transformer, the maximum peak load voltage is closest to
a. 21 V
b. 25 V
c. 29.6 V
d. 35.4 V

4. If the line voltage is 115 V rms, a turns ratio of 5: 1 means
the rms secondary voltage is closest to
a. 15 V
b. 23 V
c. 30 V
d. 35 V

5. What is the peak load voltage in a full-wave rectifier if the
secondary voltage is 20 V rms?
a. 0 V
b. 0.7 V
c. 14.1 V
d. 28.3 V

6. We want a peak load voltage of 40 V out of a bridge
rectifier. What is the approximate rms value of secondary
voltage?
a. 0 V
b. 14.4 V
c. 28.3 V
d. 56.6 V

7. What is the peak load voltage out of a bridge rectifier for
a secondary voltage of 15 V rms? (Use second approximation.)
a. 9.2 V
b. 15 V
c. 19.8 V
d. 24.3 V

8. If the load current is 5 mA and the filter capacitance is
1000uF, what is the peak-to-peak ripple out of a bridge
rectifier?
a. 21.3 pV
b. 56.3 nV
c. 21.3 mV
d. 41.7 mV

9. What is the PIV across each diode of a bridge rectifier
with a secondary voltage of 20 V rms?
a. 14.1 V
b. 20 V
c. 28.3 V
d. 34 V

10. The collector current is 10 mA. If the current gain is 100,
the base current is
a. 1 microamp
b. 10 microamp
c. 100 microamp
d. 1 mA

11. The base current is 50 microamp. If the current gain is
125, the collector current is closest in value to
a. 40 microamp
b. 500 microamp
c. 1 mA
d. 6 mA

12. If the ac voltage across the emitter diode is 1 mV and
the ac emitter current is 0.1 mA, the ac resistance of the
emitter diode is
a. 1 ohm
b. 10 ohm
c. 100 ohm
d. 1 kohm

13. If RC = 3.6 kohm and RL = 10 kohm, the ac load resistance equals
a. 10 kohm

b. 2.65 kohm
c. I kohm
d. 3.6 kohm

14. If Beta = 200 and re = 150 ohm, the input impedance of
the base is approximately
a. 30 kohm
b. 600 n
c. 3 kohm
d. 5 kohm

15. If an emitter follower has VCEQ = 5 V, ICQ = 1 mA,
and re = 1 kohm, the maximum peak-to-peak unclipped
output is
a. 1 V
b. 2 V
c. 5 V
d. 10 V

16. If an emitter follower has re' = 10 ohm and re = 90 ohm,
the voltage gain is approximately
a. 0
b. 0.5
c. 0.9
d. 1

17. A Darlington transistor has a Beta of 8000. If RE = 1
kohm and RL = 100 ohm, the input impedance of the base is
closest to
a. 8 kohm
b. 80 kohm
c. 800 kohm
d. 8 Mohm

18. If a JFET has IDSS = 10 mA and VP = 2 V, then RDS
equals
a. 200 ohm
b. 400 ohm
c. 1 kohm
d. 5 kohm

19. If the power gain doubles, the decibel power gain increases by
a. A factor of 2
b. 3 dB
c. 6 dB
d. 10 dB

20. If the voltage gain doubles, the decibel voltage gain
increases by
a. A factor of 2
b. 3 dB
c. 6 dB
d. 10 dB

21. If the voltage gain is 10, the decibel voltage gain is
a. 6 dB
b. 20 dB
c. 40 dB
d. 60 dB

22. If the voltage gain is 100, the decibel voltage gain is
a. 6 dB
b. 20 dB
c. 40 dB
d. 60 dB

23. If the voltage gain is 2000, the decibel voltage gain is
a. 40 dB
b. 46 dB
c. 66 dB
d. 86 dB

24. Two stages have decibel voltage gains of 20 and 40 dB.
The total ordinary voltage gain is
a.1
b. 10
c. 100
d. 1000

25. Two stages have voltage gains of 100 and 200. The total
decibel voltage gain is
a. 46 dB
b. 66 dB
c. 86 dB
d. 106 dB

26. One frequency is 8 times another frequency. How many
octaves apart are the two frequencies?
a. 1
b. 2
c. 3
d. 4

27. If f = 1 MHz, and f2 = 10 Hz, the ratio f/f2 represents
how many decades?

a. 2
b. 3
c. 4
d. 5

28. The voltage gain of an amplifier decreases 20 dB per
decade above 20 kHz. If the midband voltage gain is 86 dB,
what is the ordinary voltage gain at 20 MHz?
a. 20
b. 200
c. 2000
d. 20,000

29. If the cutoff frequency is 15 Hz and the midband openloop
voltage gain is 1,000,000, the unity-gain frequency is
a. 25 Hz
b. 1 MHz
c. 1.5 MHz
d. 15 MHz

30. If the unity-gain frequency is 5 MHz and the midband
open-loop voltage gain is 200,000, the cutoff frequency is
a. 25 Hz
b. 1 MHz
c. 1.5 MHz
d. 15 MHz

31. If funity is 10 MHz and midband open-loop voltage gain
is 1,000,000, then the open-loop cutoff frequency of the op
amp is
a. 10 Hz
b. 20 Hz
c. 50 Hz
d. 100 Hz

32. An op amp has a voltage gain of 500,000. If the output
voltage is 1 V, the input voltage is
a. 2 microvolts
b. 5 mV
c. 10 mV
d. 1 V

33. 1 ppm is equivalent to
a. 0.1%
b. 0.01%
c. 0.001%
d. 0.0001%

34. If AOL = 200,000, the closed-loop knee voltage of a
silicon diode is
a. 1 uV
b. 3.5 uV
c. 7 uV
d. 14 uV

35. The input to a peak detector is a triangular wave with a
peak-to-peak value of 8 V and an average value of 0. The
output is
a. 0
b. 4 V
c. 8 V
d. 16 V

36. The input voltage to a positive limiter is a triangular
wave of 8 V pp and an average value of 0. If the reference
level is 2 V, the output is
a. 0
b. 2 Vpp
c. 6 Vpp
d. 8 Vpp

37. The discharging time constant of a peak detector is 10
ms. The lowest frequency you should use is
a.10 Hz
b.100 Hz
c. 1 kHz
d. 10 kHz

38. If the output of a voltage regulator varies from 15 to 14.7
V between the minimum and maximum load current, the
load regulation is
a. 0
b. 1%
c. 2%
d. 5%

39. If the output of a voltage regulator varies from 20 to 19.8
V when the line voltage varies over its specified range, the
source regulation is
a. 0
b. 1%
c. 2%
d. 5%

40. A voltage regulator has a ripple rejection of -60 dB. If
the input ripple is 1 V, the output ripple is
a. -60 mV
b. 1 mV
c. 10 mV
d. 1000 V