Probable Multiple Choice Questions and Answers on Analog Electronics circuit

Q1. Which of the following oscillators is suitable for frequencies in the range of mega hertz?

RC phase shift

Wien bridge

Hartley

Both (1) and (3)

Answer. 3

Q2. For a base current of 10 μA, what is the value of collector current in common emitter if βdc = 100

10 μA

100 μA

10 mA

1 mA

Answer. 4

Q3. To prevent a DC return between source and load, it is necessary to use ……

resistor between source and load

inductor between source and load

capacitor between source and load

either (1) or (2)

Answer. 3

Q4. . MOSFET can be used as a ……

Current controlled capacitor

Volatge controlled capacitor

Current controlled inductor

Voltage controlled induact

Answer. 2

Q5. If the input to the ideal comparator shown in the figure is a sinusoidal signal of 8 V (peak to peak) without any DC component, then the output of the comparator has a duty cycle of ……

1/2

1/3

1/6

1/12

Answer. 2

Q6. If an amplifier with a gain of – 1000 and feedback factor β = – 0.1 had a gain change of 20% due to temperature, the change in the gain of the feedback amplifier would be …….

10%

5%

0.2%

0.01%

Answer. 3

Q7. The load impedance ZL of a CE amplifier has R and L in series. The phase difference between output and input will be …….

180°

0

more than 90° but less than 180°

more than 180° but less than 270°

Answer. 4

Explanation: It is 180° for purely resistive load and between 180° and 270° for R-L load

Q8. An RC coupled amplifier has an open loop gain of 200 and a lower cutoff frequency of 50 Hz. If negative feedback with β = 0.1 is used, the lower cut off frequency will be ……

about 50 Hz

about 5 Hz

about 2.38 Hz

about 70.5 Hz

Answer. 3

Q9. The MOSFET switch in its ON state is equivalent to ……

Resistor

Inductor

Capacitor

Battery

Answer. 3

Q10. In the figure below v1 = 8 V and v2 = 4 V. Which diode will conduct?

D2 only

D1 only

Both D1 and D2

Neither D1 nor D2

Answer. 2

Explanation:

D1 will conduct and the output voltage will be about 7 V. Therefore D2 will be reverse biased and will not conduct.

Q11. The action of JFET in its equivalent circuit can best be represented as a

current controlled current source

current controlled voltage source

voltage controlled voltage source

voltage controlled current source

Answer. 4

Q12. In a CB amplifier the maximum efficiency could be

99%

85%

50%

25%

Answer. 4

Q13. In a pn junction diode under reverse bias, the magnitude of electric field is maximum at

the edge of the depletion region on the p side

the edge of the depletion region on the n side

the pn junction

the center of the depletion region on the n side

Answer. 3

Q14. To prevent a DC return between source and load , it is necessary to use …….

resistor between source and load

inductor between source and load

capacitor between source and load

both 1 and 2

Answer. 3

Q15. The cascade amplifier is a multistage configuration of …….

CC-CB

CE-CB

CB-CC

CE-CC

Answer. 2

Q16. which of the following statement is true ?

Negative feedback in an amplifier

reduces gain

increase frequency and phase distortion

reduces bandwidth

increases noise

Answer. 1

Q17. The most commonly used amplifier in sample and hold circuit is ……

a unity gain non-inverting amplifier

a unity gain inverting amplifier

an inverting amplifier with a gain of 10

an inverting amplifier with a gain of 100

Answer. 2

Q18. In a common-emitter, unbypassed resistor provides …….

voltage shunt feedback

current series feedback

negative voltage feedback

positive current feedback

Answer. 3

Q19. The current gain of a bipolar transistor drops at high frequencies because of ……..

Transistor capacitances

High current effects in the base

Parasitic inductive elements

the early effect

Answer. 1

Q20. Generally, the gain of a transistor amplifier falls at high frequencies due to …….

Internal capacitance of the device

Coupling capacitor at the input

Skin effect

Coupling capacitor at the output

Answer. 1

Q21. Voltage series feedback results in ……

Increase in both input and output impedances

Decreases in both input and output impedances

Increase in input impedance and decreases in output impedance

Decreases in input impedance and increase in output impedance

Answer. 3

Q22. MOSFET can be used as a ……

Current controlled capacitor

Volatge controlled capacitor

Current controlled inductor

Voltage controlled induact

Answer. 2

Q23. A change in the value of the emitter resistance Re in a differential amplifier

Affects the difference mode gain Ad

Affects the common mode gain Ac

Both 1 and 2

Does not affect either Ad or Ac

Answer. 2

Q24. The bandwidth of an RF tuned amplifier is dependent on ……..

Q-factor of the tuned o/p circuit

Q-factor of the tuned i/p circuit

Q-Point

Q-factor of the o/p and i/p circuits as well as Q-point

Answer. 1

Q25. The MOSFET switch in its ON state is equivalent to ……

Resistor

Inductor

Capacitor

Battery

Answer. 3

Q26. Most of the linear ICs are based on the two-transistor differential amplifer because of its …….

Input voltage-dependent linear transfer characteristics

High voltage gain

High input resistance

High CMRR

Answer. 4

Q27. The horizontal intercept of a DC load line is the same as ideal …….

Cut-off point

Satuaration point

Operating point

Quasi-saturation point

Answer. 1

Q28. A differential amplifier is invariably used in the i/p stage of all OP-Amps . This is done basically to provide the OP-Amps with a very high …….

CMRR

Bandwidth

Slew rate

Open-loop gain

Answer. 1

Q29. The early effect in a BJT is caused by …….

Fast turn-on

Fast turn-off

Large collector-base reverse bias

Large emitter-base forward bias

Answer. 3

Q30. In a transistor leakage current mainly depends on …….

Doping of base

size of emitter

rating of the transistor

Temperature

Answer. 4

Q31. A source follower using a FET usually has a voltage gain which is …….

Greater than 100

Slightly less than 1 but positive

Exactly unity but negative

About -10

Answer. 1

Q32. In an OP-amp differentiator

The amplitude of output is proportional to rate of change of input

The amplitude of output is proportional to input

Output occurs when input is finite and constant

Polarity of input and output is the same

Answer. 1

Q34. Class AB operation is often used in power large signal amplifies in order to ……..

Get maximum efficiency

Remove even harmonics

Overcome a crossover distortion

Reducing collector dissipation

Answer : 3

Q35. Which of the following amplifier circuit using junction transistor has the best gain?

Common base

Common emitter

Common collector

All have the same gain

Answer: 2

Q36. When a transistor is connected in common emitter mode, it will have ……

Negligible input resistance and high output resistance

High input resistance and low output resistance

Medium input resistance and high output resistance

Low input resistance as well as output resistance

Answer. 3

Q37. In all base driver amplifiers, ……..

ac collector voltage is 1800 out of phase with ac base

ac emitter voltage is 1800 out of phase with ac base voltage

ac collector voltage is in phase with ac base voltage

none of the above

Answer. 1

Q38. The effective channel length of a MOSFET in saturation, decreases with increase in ……

Gate voltage

Drain voltage

Source voltage

Body voltage

Answer. 2

Q39. Which of the following statement is not true?

Push-pull signals are equal and opposite in phase

class AB operation cannot be used for a push-pull audio power output phase

A push-pull output transformer has a center-tapped primary

All of the above

Answer. 2

Q40. The encapsulation of a transistor is necessary for …….

Preventing radio interference

Preventing photo-emission effect

Avoiding loss of free electrons

Mechanical ruggedness

Answer. 4

Q41. In deriving ac equivalent circuit for an amplifier circuit we short circuit …….

all transistor

all resistor

all inductors

all capacitors

Answer. 4

Q42. Thermal runaway is not possible in FET because as the temperature of FET increases,……

the mobility decreases

the transconductance increases

the drain current increases

none of the above

Answer. 1

43. To prevent a DC return between source and load, it is necessary to use

A. resistor between source and load

B. inductor between source and load

C. capacitor between source and load

D. either (a) or (b)

Answer: Option C

Explanation:

Capacitor offers infinite impedance to DC.

44. For a base current of 10 μA, what is the value of collector current in common emitter if βdc = 100

A. 10 μA

B. 100 μA

C. 1 mA

D. 10 mA

Answer: Option C

Explanation:

IC = 10 x 100 μA = 1 mA.

45. Which of the following oscillators is suitable for frequencies in the range of mega hertz?

A. RC phase shift

B. Wien bridge

C. Hartley

D. Both (a) and (c)

Answer: Option C

Explanation:

Only LC oscillators are suitable for MHz range.

46.If the input to the ideal comparator shown in the figure is a sinusoidal signal of 8 V (peak to peak) without any DC component, then the output of the comparator has a duty cycle of

A. 1/2

B. 1/3

C. 1/6

D. 1/12

Answer: Option B

Explanation:

47. A half wave diode circuit using ideal diode has an input voltage 20 sin ωt volts. Then average and rms values of output voltage are

A. and 10 V

B. and 10 V

C. and 5 V

D. and 5 V

Answer: Option B

Explanation:

and VC = 0.5 x 20 = 10 V.

48. The Power Factor of an AC circuit is givan by

(A) Z/R

(B) R/XL

(C) XL/R

(D) R/Z

Answer: XL/R

49. Best electronic device for fast switching application s

(A) JFET

(B) MOSFET

(C) BJT

(D) diode

Answer: MOSFET

Explanation: 1. For current mode signal processing, BJT will be faster since its current amplification doesnt involve large changes in junction potential. 2. For switching applications where the collector/drain voltage has to go close to zero and back up, MOSFET will be faster, since in case of a BJT there will be minority carrier storage in the base in saturation which will take time to flush out. 3. For typical ciruits in modern processes (0.18um and lower) MOSFETs will be faster since they can be much smaller than BJT and therefore have smaller junction capacitances.

50. A forward resistance of diode will be

(A) small

(B) very high

(C) infinity

(D) zero

Answer: small

51. the output resistance of common base transistor circuit is of the order of

(A) 1 ohm

(B) 10 ohm

(C) 100 ohm

(D) zero

Answer: 100 ohm

Q52. The voltage regulation is .... . in an excellent power supply

(A) zero

(B) large

(C) infinity

(D) negative

Answer: zero

53. Rectifier: Oscillator::

(A) DC:AC

(B) capacitance: inductance

(C) series resonance: parallel resonance

(D) regulation: efficiency

Answer: DC:AC

54. A multivibrator can be used as

(A) cavity resonator

(B) harmonic generator

(C) waveform modifier

(D) any of these

Answer: harmonic generator

55. Transformer is ..... in full wave rectifier

(A) not essential

(B) essential

(C) need not be used

(D) may be used or may not

Answer: essential

56. The type of feedback used in Schmitt trigger is

(A) open loop

(B) negative feedback

(C) positive feedback

(D) None of the above

Answer: positive feedback

Explanation: Schmitt trigger convert any shaped wave to square wave.it has regenerative action hence it uses positive feedback.

Q57. When a network has 10 nodes and 17 branches then number of different node pair voltages would be

(A) 7

(B) 10

(C) 8

(D) 9

Answer: 9

Q58. Wien bridge uses

(A) resistors

(B) capacitors and resistors

(C) capacitors

(D) inductors

Answer: capacitors and resistors

59. Reactive current through capacitive load produces

(A) current

(B) Electric field

(C) magnetic field

(D) flux

Answer: Electric field

60 . Ebers-Moll model of BJT is valid

(A) active mode

(B) cut-off mode

(C) saturation mode

(D) in active, saturation and cut-off modes

Answer: in active, saturation and cut-off modes

Explanation: Ebers Moll model is a simple and elegant way of representing the transistor as a circuit model. The Ebers Moll model of transistor holds for all regions of operation of transistor. This model is based on assumption that base spreading resistance can be neglected.

61. The Effective Channel Length of MOSFET in saturation decreases with increase in

(A) gate voltage

(B) drain voltage

(C) body voltage

(D) source voltage

Answer: drain voltage

62. varactor diode is used for

(A) amplification

(B) tuning purpose

(C) synchronization

(D) regulation

Answer: tuning purpose

63. Power factor of a series RLC Circuit at its half power points is

(A) unity

(B) either lagging or leading

(C) lagging

(D) leading

Answer: either lagging or leading

64. If power factor of a circuit is unity its reactive power is

(A) a maximum

(B) equal to (I^2)R

(C) zero

(D) a negative quantity

Answer: zero

65. BJT in CE mode Amplifier can be treated as

(A) non-inverting amplifier

(B) inverting amplifier

(C) voltage follower

(D) latching circuit

Answer: inverting amplifier

Q66. A power amplifier has a gain of 20dB and an input level of 2volts. Assuming that the input and impedance are the same, what is the voltage level at amplifier output?

(A) 200V

(B) 20V

(C) 10V

(D) 50V

Answer: 20V

Q67. The current amplification factor adc is given by ?

(A) IC/IE

(B) IB/IE

(C) IC/IB

(D) IE/IB

Answer: IC/IE

68. A high tuned circuit in a tuned amplifier permits it to have high

(A) Sensitivity

(B) Selectivity

(C) Fidelity

(D) Frequency range

Answer: Selectivity

69. The best circuit used to eliminate power frequency hum is

(A) Scratch filter

(B) Speech filter

(C) Octave filter

(D) Rumble filter

Answer: Rumble filter

70. Which of the following op-amp system is non linear

(A) Active filter

(B) Voltage follower

(C) Voltage to current converter

(D) Sample and hold circuit

Answer: Sample and hold circuit

71. A class C amplifier is biased to operate for

(A) More than 180 of the input signal cycle

(B) Less than 180 of the input signal cycle

(C) 360 of the input signal cycle

(D) None of these

Answer: More than 180 of the input signal cycl

72. Improper biasing of transistor results in

(A) Distortion in output signal

(B) Excessive heating at collector terminal

(C) Heavy loading of emitter terminal

(D) All of the above

Answer: Distortion in output signal

73 . Positive feedback leads to

(A) Stability in the gain of the amplifier

(B) Decrease the gain of the amplifier

(C) Instability in the gain of the amplifier

(D) None of these

Answer: Instability in the gain of the amplifier

74. Negative feedback is

(A) Direct feedback

(B) Regenerative feedback

(C) Inverse feedback

(D) None of these

Answer: Inverse feedback

75. An ideal op-amp has

(A) Infinite output impedance

(B) Zero output impedance

(C) Low voltage gain

(D) Zero input impedance

Answer: Zero output impedance

Explanation:

76. An operational amplifier is

(A) A direct coupled amplifier

(B) An indirect coupled amplifier

(C) A high gain amplifier

(D) Both A and C

Answer: Both A and C

Explanation:

77. In transistor amplifier CE mode is preferred because it provides

(A) Less energy loss

(B) More circuit balance

(C) Both voltage and current gain

(D) None of these

Answer: Both voltage and current gain

Q78. A transistor can be used as an amplifier in its

(A) Active region

(B) Saturation region

(C) Both saturation and active region

(D) Cut off region

Answer: Active region

79. Reverse saturation current in a transistor

(A) Increases with increase in temperature

(B) Decreases with increase in temperature

(C) Remains same with increase in temperature

(D) None of these

Answer: Increases with increase in temperature

Q80. Most stabe transistor circuit is

(A) Fixed bias circuit

(B) Voltage divider bias circuit

(C) Emitter stabilized bias circuit

(D) None of these

Answer: Voltage divider bias circuit

81. In linear region operation of transistor

(A) B-E junction is forward biased

(B) B-E junction is reverse biased

(C) C-B junction is reverse biased

(D) Both A and C

Answer: Both A and C

82. In a Half wave rectifier the best filter is

(A) C filter

(B) L filter

(C) Pi filter

(D) None of these

Answer: Pi filter

83. Practically efficiency is maximum for

(A) Bridge rectifier

(B) Centre tapped full wave rectifier

(C) Half wave rectifier

(D) Both A and B

Answer: Centre tapped full wave rectifier

Q84. Bridge rectifier is normally avoided

(A) In low voltage rectification

(B) In high voltage rectification

(C) In all types of voltage rectification

(D) In square wave rectification

Answer: In low voltage rectification

Q85 .A rectifier output is a

(A) Pure dc signal

(B) Pure ac signal

(C) Partial dc signal

(D) pulsating dc signal

Answer: pulsating dc signal

86. Clamping circuit depend mostly on

(A) Capacitance of the circuit

(B) Resistance of the circuit

(C) Time constant of the circuit

(D) None of these

Answer: Time constant of the circuit

87. A positive half wave rectifier is a

(A) Positive clipper

(B) negative clipper

(C) negative clamper

(D) None of these

Answer: negative clipperQ1. When XC = XL the circuit:

88. Removing bypass capacitor across the emitter-leg resistor in a CE amplifier causes

(A) decrease in voltage gain

(B) decrease in current gain

(C) increase in voltage gain

(D) increase in current gain

Answer: decrease in voltage gain

89. In a bistable multivibrator circuit, commutating capacitor is used

(A) to provide ac coupling

(B) to reduce gain

(C) to increase the base storage charge

(D) to increase the speed of response

Answer: to increase the speed of response

90. An oscillator of the LC type that has a split capacitor in the circuit is

(A) Weinbridge oscillator

(B) Colpitts oscillator

(C) Hartly oscillator

(D) RC phase shift oscillator

Answer: Colpitts oscillator

91. The upper cutoff frequency of an RC coupled amplifier mainly depends upon

(A) Coupling Capacitor

(B) bypass capacitor

(C) Output capacitance

(D) Inter electrode capacitance and stray shunt capacitance

Answer: Inter electrode capacitance and stray shunt capacitance

92. In a series RLC circuit, which value may always be used as a vector reference?

(A) voltage

(B) current

(C) resistance

(D) reactance

Answer: current

93. A voltage amplifier amplifies signal voltage. Similarly, a power amplifier

(A) converts the dc power into useful ac power

(B) amplifies power

(C) amplifies signal current

(D) converts the signal ac power into the dc power

Answer: converts the dc power into useful ac power

94. The lowest output impedance is obtained in case of BJT amplifiers for

(A) CB configuration

(B) CE configuration

(C) CC configuration

(D) CB with RE configuration

Answer: CC configuration

95.In a parallel RLC circuit, which value may always be used as a vector reference?

(A) voltage

(B) current

(C) resistance

(D) reactance

Answer: voltage

96. The type of power amplifier which exhibits crossover distortion in its output is

(A) Class A

(B) Class B

(C) Class C

(D) Class AB

Answer: Class B

97. A differential amplifier, amplifies

(A) the average of the voltages on the two input lines

(B) the sum of the two input waveform

(C) difference of voltages between the two input lines

(D) None of these

Answer: difference of voltages between the two input lines

98. When considering the reactance of a series RLC circuit:

(A) Resistance is always dominant.

(B) Capacitive reactance is always dominant

(C) Inductive reactance is always dominant

(D) The larger of the two reactances is dominant.

Answer: The larger of the two reactances is dominant.

99. Current in a series RLC circuit may always be used as:

(A) leading vector

(B) reference

(C) angle

(D) lagging vector

Answer: reference

100. If the bandwidth of a filter increases:

(A) Q decreases

(B) the half-power frequency decreases

(C) the center frequency decreases

(D) the roll-off rate increases

Answer: Q decreases

Q101. The voltage measured across the two series reactive components at resonant frequency is?

(A) Reactive voltage

(B) zero

(C) Applied voltage

(D) inductive

Answer: zero

Q102. When only the low frequencies are allowed to pass to the output, the filter is known as:

(A) low-pass filter

(B) high-pass filter

(C) bandpass filter

(D) band-stop filter

Answer: low-pass filter

Q103. When a full band of frequencies is allowed to pass through a filter circuit to the output, the resonant circuit is called a:

(A) low-pass filter

(B) high-pass filter

(C) bandpass filter

(D) band-stop filter

Answer: bandpass filter

104. The function of bleeder resistor in a power supply is

(A) to increase the output dc voltage

(B) to ensure a minimum current drain in the circuit

(C) the same as that of load resistor

(D) to increase the output current

Answer: to ensure a minimum current drain in the circuit

105. A 6 kHz sinusoidal voltage is applied to a series RC circuit. The frequency of the voltage across the resistor is

(A) 0 Hz

(B) 6 kHz

(C) 12 kHz

(D) 17.2 kHz

Answer: 6 kHz

106. When a parallel circuit resonates it is said to:

(A) flywheel

(B) oscillate

(C) both of the above

(D) None of these

Answer: both of the above

107. the transit time of the current carrier through the channel of an FET decides its _____ characteristics.

(A) on/off

(B) dynamic

(C) load

(D) switching

Answer: switching

108. In thyristers, holding current is

(A) more than latching current

(B) very large

(C) very small

(D) less than latching current

Answer: less than latching current

109 . Efficiency of a full wave rectifier is

(A) 50.00%

(B) 100.00%

(C) 91.40%

(D) 81.20%

Answer: 81.20%

110. The emitter of a transitor is doped

(A) lightly

(B) moderately

(C) heavily

(D) none of these

Answer: heavily

111. Internal resistance of ideal voltage source is

(A) infinite

(B) can take any value

(C) depends on load resistor

(D) 0

Answer: 0

112. Colpitt oscillators are for

(A) AF

(B) RF

(C) Both

(D) None

Answer: RF

113. With increase in length of conductor,its resistance

(A) increases

(B) decreases

(C) remains same

(D) becomes zero

Answer: increases

114. Internal resistance of ideal current source is

(A) 0

(B) not known

(C) infinite

(D) depends on applivation

Answer: infinite

115. Effiiency in maximum power transfer is

(A) 50.00%

(B) 100.00%

(C) 30.00%

(D) 75.00%

Answer: 50.00%

116. Notch filter is

(A) BPF

(B) LPF

(C) HPF

(D) narrowband reject filter

Answer: narrowband reject filter

117. The lowest frequency of LPF is

(A) 1 Hz

(B) 0 hz

(C) 10 hz

(D) depends on fc

Answer: 0 hz

118. The zero level detector is application of

(A) differentiator

(B) summing amplifier

(C) integrator

(D) comparator

Answer: comparator

119. A comparator with hysteresis

(A) has 1 trigger point

(B) has 2 trigger points

(C) has variable trigger point

(D) is like magnetic circuit

Answer: has 2 trigger points

120. Instrumentation Amplifiers are used primarily in

(A) Test equipment

(B) High noise environment

(C) Medical equipment

(D) Filter circuits

Answer: Test equipment

121. The control signal for sample and hold is applied to

(A) Diode

(B) Triac

(C) MOS

(D) SCR

Answer: MOS

122. For a step input ,output of integrator is

(A) Pulse

(B) Ramp

(C) Triangular wave

(D) Spike

Answer: Ramp

123. The input circuit of CB amplifier is

(A) emitter base circuit

(B) emitter collector circuit

(C) base collector circuit

(D) collector base emitter circuit

Answer: base collector circuit

124. feedback regulator s are used to provide

(A) high load current

(B) low load current

(C) medium load current

(D) very low load current

Answer: high load current

125. Which of the following are components of CPU?

(A) Arithmetic logic unit, Control unit

(B) Arithmetic logic unit, Mouse, Keyboard

(C) Arithmetic logic unit, Integrated Circuits

(D) Control Unit, Monitor

Answer: Arithmetic logic unit, Control unit

126. Which among following first generation of computers had?

(A) Integrated Circuits

(B) Vacuum Tubes and Magnetic Drum

(C) Magnetic Tape and Transistors

(D) Transistors

Answer: Vacuum Tubes and Magnetic Drum

127. The difference between the half power frequencies is known as:

(A) resonant frequency

(B) bandwidth

(C) cutoff frequency

(D) None of these

Answer: bandwidth

128. In an electric circuit, the dual of resistance is

(A) capacitance

(B) conductance

(C) inductance

(D) admittance

Answer: conductance

129. In the case of BJT amplifier, bias stability is achieved by

(A) Keeping the base current constant

(B) Keeping the temperature constant

(C) Changing the base current in order to keep Ic and Vce constant

(D) Keeping the temperature and base current constant

Answer: Changing the base current in order to keep Ic and Vce constant

130. A resistor and capacitor in series is known as:

(A) Pulse Circuit

(B) Schmitt Circuit

(C) Oscillator Circuit

(D) Timing Circuit

Answer: Timing Circuit

131. Which one has the highest noise margin?

(A) Schottky TTL

(B) Low power Schottky TTL

(C) CMOS

(D) TTL Standard

Answer: CMOS

132. Which of the following is desirable parameter?

(A) Higher noise margin

(B) Lower noise margin

(C) Optimum noise margin

(D) None of these

Answer: Higher noise margin

133. Connecting the negative and positive leads of a battery will produce:

(A) A low current path

(B) An open circuit

(C) A short circuit

(D) A high resistance circuit

Answer: A short circuit

134. The bandwidth of an RF amplifier is dependent on

(A) Q factor of the tuned input circuit

(B) Quiescent operating point

(C) Q factor of the tuned output circuit

(D) None of these

Answer: Q factor of the tuned output circuit

135. If two resistors are placed in series, the final resistance:

(A) Will be lower

(B) Will be higher

(C) Will be same

(D) Cannot be determined

Answer: Will be higher

136. If a small value of capacitance is connected in parallel with a large value, the combined capacitance will be nearest to:

(A) Higher

(B) The same

(C) Lower

(D) zero

Answer: Higher

137. Unused input in TTL gate acts as:

(A) Logical 0

(B) Logical 1

(C) No effect

(D) None of these

Answer: Logical 1

138. What does LED stand for?

(A) Light Emitting Diode

(B) Light Emitting Display

(C) Light Emitting Display

(D) Low Energy Diode

Answer: Light Emitting Diode

139. Negative feedback in an amplifier:

(A) Increase gain

(B) Increase Noise

(C) Reduces bandwidth

(D) Reduces gain

Answer: Reduces gain

140. A 50k resistor in parallel with 50k produces:

(A) 50k

(B) 100k

(C) 25k

(D) 200k

Answer: 25k

141. If we connect two 3V batteries in series, the output voltage will be:

(A) 6v

(B) 3v

(C) 1v

(D) 1.5v

Answer: 6v

142. If we connect two 3V batteries in parallel, the output voltage will be

(A) 3v

(B) 6v

(C) 1.5v

(D) 1v

Answer: 3v

143. Which of the following transistors can be used in E-mode?

(A) JFET

(B) MOSFET

(C) NPN transistors

(D) UJT

Answer: MOSFET

144. The two input terminals of an op-amp are known as:

(A) Positive and negative

(B) High and low

(C) Inverting and non-inverting

(D) Differential and non-differential

Answer: Inverting and non-inverting

145. The number of electrons in the outer most orbit of carbon atom is

(A) 2

(B) 4

(C) 6

(D) 8

Answer: 4

146. Electric current passing through the circuit produces

(A) luminous effect

(B) magnetic effect

(C) thermal effect

(D) chemical effect

Answer: thermal effect

147. According to Kirchhoffs voltage law, the algebraic sum of all IR drops and EMFs in any closed loop of a network is always

(A) zero

(B) negative

(C) positive

(D) determined by EMFs

Answer: zero

148. Voltage dependent resistors are used

(A) for inductive circuits

(B) as current stabilizers

(C) to supress surges

(D) as heating elements

Answer: to supress surges

149. For testing appliances, the wattage of test lamp should be

(A) low

(B) high

(C) very low

(D) any value

Answer: high

150. Nichrome wire is an alloy of

(A) lead and zinc

(B) nickel and chromium

(C) chromium and Gold

(D) copper and silver

Answer: nickel and chromium

151. Two lamps 100 W and 60 W are connected in series across 230 V (alternating). Which of the following statement is correct?

(A) 60 W lamp will glow brighter

(B) 100 W lamp will glow brighter

(C) Both lamps will equally bright

(D) None of these

Answer: 60 W lamp will glow brighter

152. Another name of Electric pressure

(A) current

(B) voltage

(C) power

(D) energy

Answer: voltage

153. The efficiency of a transformer will be maximum when

(A) copper losses = iron losses

(B) copper losses = hysteresis losses

(C) hysteresis losses = eddy current losses

(D) eddy current losses = copper losses

Answer: copper losses = iron losses

154. A transformer transforms

(A) current

(B) voltage

(C) power

(D) frequency

Answer: power

155. Application of Nortons theorem to a circuit gives

(A) equivalent impedance

(B) equivalent current source and impedance in parallel

(C) equivalent current source and impedance in series

(D) equivalent current source

Answer: equivalent current source and impedance in parallel

156. A field line and an equipotential surface are

(A) inclined at any angle

(B) always at 90°

(C) always parallel

(D) None of these

Answer: always at 90°

157. Which of the following is a bilateral element?

(A) Capacitance

(B) current source

(C) voltage source

(D) None of these

Answer: Capacitance

158. Which of the following is the passive element?

(A) Capacitance

(B) current source

(C) voltage source

(D) All of the above

Answer: Capacitance

159. A closed path made by several branches of the network is known as

(A) branch

(B) loop

(C) junction

(D) circuit

Answer: loop

160. With rise in temperature the resistance of pure metals:

(A) decreases

(B) remains constant

(C) increases

(D) first decreases and then increases

Answer: increases

161. Which of the following statement is true both for a series and a parallel D.C. circuit?

(A) Currents are additive

(B) Power are additive

(C) Voltages are additive

(D) None of these

Answer: Power are additive

162. Two resistors are said to be connected in series when

(A) same current passes through them

(B) different current passes through them

(C) Both are correct

(D) None of these

Answer: same current passes through them

163. An electric filament bulb can be worked from:

(A) DC supply only

(B) AC supply only

(C) Battery supply only

(D) All are correct

Answer: All are correct

164. The resistance of a conductor varies inversely with

(A) temperature

(B) area of cross-section

(C) length

(D) resistivity

Answer: area of cross-section

165. BJT is a

(A) Current controlled device

(B) Voltage controlled device

(C) Both

(D) None

Answer: Current controlled device

166. The direction of rotation of a DC series motor can be reversed by

(A) interchanging supply terminals

(B) interchanging field terminals

(C) either interchanging supply terminals or interchanging field terminals

(D) none of these

Answer: interchanging field terminals

167. The essential condition for satisfactory parallel operation of two DC generators is that they should have same

(A) kW output rating

(B) drooping voltage characteristics

(C) percentage regulation

(D) speed of operation

Answer: drooping voltage characteristics

168 charge stores in:-

(A) Resistor

(B) capacitor

(C) Doide

(D) Transistor

Answer: capacitor

169. frequency is

(A) Time

(B) 1/2*Time

(C) 1/Time

(D) 2/3*Time

Answer: 1/Time

170. nand gate is combination of

(A) not and and

(B) not and or

(C) not

(D) or

Answer: not and and

171. Drift velocity of electrons is

(A) larger than speed of light

(B) almost equal to speed of light

(C) equal to speed of light

(D) very small in comparison to speed of light

Answer: very small in comparison to speed of light

172. If we consider two wires copper and aluminium of same length,which will have higher resistance

(A) Aluminium

(B) copper

(C) both

(D) undetermined

Answer: undetermined

173. When voltage applied across an electric iron is halved, the power consumption of the iron will reduce to

(A) Half

(B) 1/4th

(C) 1/2th

(D) None of the above

Answer: 1/4th

174. to convert infix notation to postfix notation which data structure is needed

(A) stack

(B) linear list

(C) queue

(D) dequeue

Answer: stack

175. Time delay relay in used in which relay type

(A) Magnetic relay

(B) Thermal relay

(C) Reed relay

(D) Latching relay

Answer: thermal relay

176. which are the universal gates

(A) xor

(B) and

(C) nor

(D) nand

Answer: nand

177. how many bits in one nibble

(A) 3

(B) 2

(C) 1

(D) 4

Answer: 4

Explanation:

178. which type of cable and name is used

(A) console and rs232

(B) serial and rs232

(C) console and rs240

(D) serial and rs240

Answer: console and rs232

Explanation:

179. what is the reciprocal of resistance

(A) conductance

(B) inductance

(C) reluctance

(D) capacitance

Answer: conductance

180. A 741 C contains

(A) Distortion resistors

(B) Inductors

(C) Active load resistors

(D) A large coupling capacitor

Answer: Active load resistors

181. When the initial slope of a sine wave is greater than the slew rate

(A) Distortion occurs

(B) Linear operation occurs

(C) Voltage gain is maximum

(D) The op amp works best

Answer: Distortion occurs

182. unity gain amplifier is a

(A) difference amplifier

(B) comparator

(C) single ended

(D) voltage follower

Answer: voltage follower

183. Of the values listed, the most realistic value for open-loop voltage gain of an OP-amp is

(A) 0

(B) 1000

(C) 90 dB

(D) 10db

Answer: 90 dB

184. With zero volts on both inputs, an OP-amp ideally should have an output

(A) equal to the inverting voltage

(B) equal to the non inverting voltage

(C) equal to zero

(D) equal to CMRR

Answer: equal to zero

185. If the cutoff frequency is 20 Hz and the mid band open loop voltage gain is 1,000,000 the unity

gain frequency is

(A) 20 Hz

(B) 1 MHz

(C) 2MHz

(D) 20MHz

Answer: 20MHz

186. At the unity gain frequency, the open loop voltage gain is

(A) 1

(B) Av(mid)

(C) Zero

(D) Very large

Answer: 1

187. The voltage gain of a loaded differential amp is

(A) Large than the unloaded voltage gain

(B) Equal to Rc/ re

(C) Smaller than the unloaded voltage gain

(D) Impossible to determine

Answer: Smaller than the unloaded voltage gain

188. With both bases grounded, the only offset that produces an error is the

(A) Input offset current

(B) Input bias current

(C) Input offset voltage

(D) None of these

Answer: Input offset voltage

189. The use of negative feedback

(A) reduces the voltage gain of an Op-amp

(B) makes the Op-amp oscillate

(C) makes linear operation possible

(D) Both A and B

Answer: Both A and B

190. The input offset current is usually

(A) Less than the input bias current

(B) Equal to zero

(C) Less than the input offset voltage

(D) Unimportant when a base resistor is used

Answer: Less than the input bias current

191. The typical input stage of an op amp has a

(A) Single ended input and single ended output

(B) Single ended input and differential output

(C) Differential input and single ended output

(D) Differential input and differential output

Answer: Differential input and single ended output

192. The common mode rejection ratio is

(A) Very low

(B) As high as possible

(C) Equal to the voltage gain

(D) Equal to the common mode voltage gain

Answer: As high as possible

193. The input stage of an op amp is usually a

(A) Differential amp

(B) Class B push pull amplifier

(C) CE amplifier

(D) Swamped amplifier

Answer: Differential amp

194. The common mode voltage gain is

(A) Smaller than the voltage gain

(B) Equal to the voltage gain

(C) Greater than the voltage gain

(D) None of the above

Answer: Smaller than the voltage gain

195. A common-mode signal is applied to

(A) The non-inverting input

(B) The inverting input

(C) Both inputs

(D) The top of the tail resistor

Answer: Both inputs

196. For an Op-amp with negative feedback, the output is

(A) equal to the input

(B) increased

(C) fed back to the inverting terminal

(D) fed back to the non inverting terminal

Answer: fed back to the inverting terminal

197. When the two input terminals of a diff amp are grounded

(A) The base currents are equal

(B) The collector currents are equal

(C) An output error voltage usually exists

(D) The ac output voltage is zero

Answer: An output error voltage usually exists

198. The input offset current equals the

(A) Difference between the two base currents

(B) Average of the two base currents

(C) Collector current divided by current gain

(D) Difference between the two base-emitter voltages

Answer: Difference between the two base currents

199. The op amp can amplify

(A) AC signals only

(B) DC signals only

(C) Both ac and dc signals

(D) Neither ac not dc signals

Answer: Both ac and dc signals

200. When a large sine wave drives a Schmitt trigger, the output is a

(A) Rectangular wave

(B) Triangular wave

(C) Rectified sine wave

(D) Series of ramps

Answer: Rectangular wave

201. If the input is a rectangular pulse, the output of an opamp integrator is a

(A) Sine wave

(B) Square wave

(C) Ramp

(D) Rectangular pulse

Answer: Ramp

202. Hysteresis prevents false triggering associated with

(A) A sinusoidal input

(B) Noise voltages

(C) Stray capacitances

(D) Trip points

Answer: Noise voltages

203. The voltage out of an opamp Schmitt trigger is

(A) A low voltage

(B) A high voltage

(C) Either a low or a high voltage

(D) A sine wave

Answer: Either a low or a high voltage

204. To detect when the input is greater than a particular value, use a

(A) Comparator

(B) Clamper

(C) Limiter

(D) Relaxation

Answer: Comparator

205. In a nonlinear opamp circuit, the

(A) Op amp never saturates

(B) Feedback loop is never opened

(C) Output shape is the same as the input shape

(D) Op amp may saturate

Answer: Op amp may saturate

206. The input signal for an instrumentation amplifier usually comes from

(A) An inverting amplifier

(B) A resistor

(C) A differential amplifier

(D) A wheatstone bridge

Answer: A wheatstone bridge

207. In a differential amplifier, the CMRR is limited mostly by the

(A) CMRR of the op amp

(B) Gain bandwidth product

(C) Supply voltages

(D) Tolerance of the resistors

Answer: Tolerance of the resistors

208. An instrumentation amplifier has a high

(A) Output impedance

(B) Power gain

(C) CMRR

(D) Supply voltage

Answer: CMRR

209. The voltage follower has a

(A) Closed loop voltage gain of unity

(B) Small open loop voltage gain

(C) Closed loop bandwidth of zero

(D) Large closed loop output impedance

Answer: Closed loop voltage gain of unity

210 A 741 C has

(A) A voltage gain of 100,000

(B) An input impedance of 2 M?

(C) An output impedance of 75?

(D) All of the above

Answer: All of the above

211. An op amp has a voltage gain of 200,000. If the output voltage is 1 V, the input voltage is

(A) 2uV

(B) 5uV

(C) 10 V

(D) 1 V

Answer: 5uV

212. The 741 C has a unity gain frequency of

(A) 10 Hz

(B) 20 Hz

(C) 1 MHz

(D) 15 MHz

Answer: 1 MHz

213. The open-loop voltage gain of an op-amp is the

(A) external voltage gain the device is capable of

(B) internal voltage gain the device is capable of

(C) most controlled parameter

(D) None of these

Answer: internal voltage gain the device is capable of

214. The input impedance of a BIFET op amp is

(A) Low

(B) Medium

(C) High

(D) Extremely high

Answer: Extremely high