A.P - ECET - ECE - 2016 PAPER - SET - B

101. To measure radio frequency, the suitable frequency meter is

(1) weston frequency meter
(2) feed vibrator frequency meter
(3) hetodyne frequency meter
(4) electrical resonance frequency meter

102. Chopper stabilized dc amplifier type electronic voltmeter overcomes the effect of

(1) amplifier CMRR
(2) amplifier senstivity
(3) amplifier drift
(4) electromagnetic interference

103. The miller sweep circuit normally used in a CRO is basically

(1) a voltage to current converter circuit
(2) a current to voltage converter circuit
(3) an integrator circuit
(4) a differentiator circuit

104. One cycle of a square wave signal observed on an oscilloscope is found to occupy 6cm at a scale setting of 30μs/cm. What is the signal frequency?

(1) 1.8 KHz
(2) 5.55 KHz
(3) 18 KHz
(4) 55.5 KHz

105. Which one of the following statements correctly represents the post acceleration in a CRT ?

(1) it provides deflection of the beam.
(2) it increases the brightness of the trace if the signal frequency is higher than 10MHz.
(3) it accelerates the beam before deflection.
(4) it increases the brightness of the trace of low frequency signal.

106. The degree of reproductivity among several independent measurement of same true value under reference condition is known as

(1) linearity
(2) precision
(3) accuracy
(4) calibration

107. A digital Voltmeter has a read out range from 0 to 999 counts. If the full scale reding is 9.999 V, the resolution is

(1) 1 V
(2) 0.01 V
(3) 1 mV
(4) 1 μV

108. Conductivity modulation is a phenomenon which occurs in

(1) power MOSFET
(2) GTO thyristor
(3) IGBT
(4) power bipolar transistor

109. An RC snubber circuit is used to protect a thristor against :

(1) false triggering
(2) failure to turn on
(3) switching transients
(4) failure to commutate

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110. In a SCR based converter, the free wheeling diode is used to

(1) add to the conduction current of thrysistors

(2) oppose the SCR conduction

(3) conduct current during the OFF period of the SCR

(4) protect the SCR by providing a shunt path

111. In single phase full wave controlled rectifier, maximum output voltage is obtained at conduction angle.... and minimum at conduction angle....

(1) 0^0, 180^0 (2) 180^0, 0^0

(3) 0^0, 0^0 (4) 180^0, 180^0

112. Avalanche photodiodes are preferred over PIN diodes in optical communication system because of

(1) speed of operation (2) higher senstivity

(3) larger bandwidth (4) larger power handling capability

113. Class A and class B chopper

(1) operate in first quadrant

(2) operate in second quadrant

(3) class A chopper operates in first quadrant while class B operates in second

(4) may operate in either first or second quadrant

114. A strain gauge is a passive transducer and is employed for converting

(1) mechanical displacement into a change of resistance

(2) pressure into a change of resistance

(3) force into a displacement

(4) pressure into displacement

115. In a LVDT, the two secondary voltages

(1) are independent of the core position

(2) vary unequally depending on the core position

(3) vary equally depending on the core position

(4) are always in phase quadrature

116. A TRIAC :

(1) cannot be triggered with gate voltages

(2) can be triggered by either a positive or a negative gate voltage

(3) can trigger only on positive gate voltages

(4) can trigger only on negative gate voltages

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117. What type of application would use a photovaltaic cell ?

(1) an automobile horn
(2) a TI 92 calculator
(3) a magnetic field detector
(4) a remote power source

118. AM and FM are examples of _____ modulation.

(1) digital to digital
(2) digital to analog
(3) analog to analog
(4) analog to digital

119. One of the following cannot be used to demodulate SSB :

(1) product detector
(2) diode balanced modulator
(3) bipolar transistor balanced modulator
(4) complete phase - shift transistor

120. In FM signal with a modulation index m_f is passed through a frequency tripler. The wave in the output of the tripler will have a modulation index of

(1) m_f
(2) $3m_f$
(3) $m_f/3$
(4) $m_f/9$

121. A super heterodyne reciever with an IF of 450 Hz is turned to a signal at 1200 kHz. The image frequency is

(1) 750 kHz
(2) 900 kHz
(3) 1650 kHz
(4) 2100 kHz

122. In a radio reciever, if the intermediate frequency is too high

(1) selectivity will be poor
(2) sensitivity will be poor
(3) adjacent channel rejection will improve
(4) tracking difficulties will be least

123. The most commonly used system of modulating for telegraphy is

(1) single tone modulation
(2) on-off keying
(3) frequency shift keying
(4) pulse code modulation

124. Quantization noise occurs in

(1) PAM
(2) DM
(3) PWM
(4) PPM

125. In a broadcast super heterodyne receiver having no RF amplifier, the loaded Q of the antenna coupling circuit is 100. If the intermediate frequency is 445 kHz, the image frequency at 25 MHz will be

(1) 24.09 MHz
(2) 24.54 MHz
(3) 25.45 MHz
(4) 25.91 MHz

126. Which wave is also called surface wave ?

(1) ground wave
(2) sky wave
(3) space wave
(4) both (1) and (2)

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127. The method in which the phase of carrier takes one of the four possible values such as $\pi/4$, $3\pi/4$, $5\pi/4$, and $7\pi/4$ is referred as
(1) PSk
(2) QPSK
(3) FSK
(4) ASk

128. Which transmission mode is used for data communication along telephone lines ?
(1) parallel
(2) serial
(3) synchronous
(4) asynchronous

129. Time synchronization is necessary in
(1) FDM
(2) TDM
(3) WDM
(4) quadrature multiplexing

130. In _____ transmission, we send 1 start bit (0) at the beginning and 1 or more stop bits (1s) the end of each of each byte.
(1) synchronous
(2) asynchronous
(3) isochronous
(4) both (1) and (2)

131. In _____ error corrections, the reciever corrects error without requesting retransmission.
(1) onward
(2) forward
(3) backward
(4) straight

132. _____ is an analog multiplexing technique to combine optical signals.
(1) WDM
(2) FDM
(3) TDM
(4) both (2) and (3)

133. Transmitting and recieving antennas behave
(1) identically
(2) differently
(3) equal in physical length
(4) cannot determine

134. In order to recieve a vertical polarized wave, the conductor of the dipole should be mounted
(1) horizontally
(2) vertically
(3) at an angle of 45^0
(4) at an angle of 90^0

135. One of the following is not an Omni-directional antenna :
(1) half-wave dipole
(2) log-periodic
(3) discone
(4) marconi

136. Which of the following devices uses a helix ?
(1) klystron amplifier
(2) klystron oscillator
(3) TWT
(4) both (1) and (2)

137. Which of the following radar system makes extensive use of the Doppler effect for target speed measurements ?
(1) CW
(2) MTI
(3) FM
(4) planar array

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138. Which of the following is a linear-beam tube used as a microwave amplifier ?

(1) reflex klystron (2) TWT

(3) magnetron (4) gunn

139. The life time of a geosynchronous communication

(1) 5 years (2) 10 years

(3) 20 years (4) 50 years

140. Frequency range for satellite communication is

(1) 1 kHz to 100 kHz (2) 100 kHz to 10 MHz

(3) 10 MHz to 100 MHz (4) 1 GHz to 30 GHz

141. Which of the following does not cause losses in optical fibre cables ?

(1) stepped index operation (2) impurities

(3) microbending (4) attenuation in glass

142. Which of the following is a first-generation cellular phone system ?

(1) GSM (2) AMPS

(3) D–AMPS (4) IS–95

143. $(153.153)_8 = (\quad)_{10}$

(1) $(208.751)_{10}$ (2) $(351.352)_{10}$

(3) $(107.2089)_{10}$ (4) $(108.952)_{10}$

144. $(A + B).(A + C) = ?$

(1) AB + C (2) A + BC

(3) A + B + C (4) ABC

145. The no. of NOR gates required to design a half subtractor

(1) 2 (2) 3

(3) 4 (4) 5

146. The following flip – flop is called as transparent latch :

(1) T – flip – flop (2) D – flip – flop

(3) Jk – flip – flop (4) SR – flip – flop

147. A modulus - 12 ring counter requies a minimum of _____.

(1) 10 flip – flops (2) 12 flip – flops

(3) 6 flip – flops (4) 2 flip – flops

148. In programmable array logic

(1) AND is programmed (2) OR is programmed

(3) both AND, OR are programmed (4) none

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149. EPROM can be

(1) UVPROM
(2) EEPROM
(3) both UVPROM and EEPROM
(4) none of the above

150. What is the major advantage of the R/2R ladder digital – to – analog (DAC), as compared to a binary–weighted digital – to – analog DAC converter ?

(1) it has fewer parts of the same number of the inputs
(2) it only uses two different resistor values
(3) the virtual ground is eliminated and the circuit is therefore easier to understand and trouble shoot
(4) its operation is much easier to analyze

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151. Sample and hold circuits in A/D converters :

(1) sample and hold the output of the binary counter during the condersion process
(2) stabilize the input analog signal during the conversion process
(3) stabilize the comparator's threshold voltage during the conversion process
(4) sample and hold the D/A converter staircase waveform during the conversion process

152. The fastest D/A converter among the following :

(1) Successive approximation type
(2) R – 2R ladder type
(3) binary weighted type
(4) none of the above

153. The 8051 supports a RAM of

(1) 64 K bytes
(2) 128 bytes
(3) 4 K bytes
(4) 8 K bytes

154. ANL A, @ R1 is a _____ addressing mode of 8051.

(1) direct addressing mode
(2) indirect addressing mode
(3) register addressing mode
(4) immediate addressing mode

155. The 8051 follows the following byte orientation

(1) little endian byte orientation
(2) big endian byte orientation
(3) both (1) and (2)
(4) none

156. The following statement is true for 8051 :

(1) the stack pointer is decremented when a PUSH instruction or subroutine call is made
(2) the stack pointer is incremented when a POP instruction or subroutine call is made.
(3) the stack pointer is incremented when a PUSH instruction or subroutine call is made.
(4) the stack pointer is decremented when a POP instruction or subroutine call is made.

157. The following is a function of P 3.1 pin 11

(1) RXD recieve serial data or simply I/O

(2) interrupt 0 (INT0) or simply I/O

(3) interrupt 1 (INT1) or simply I/O

(4) TXD transmit serial data or simply I/O

158. The instruction CJNE of 8051 does the following :

(1) compares the magnitude of first two operands, and branches if their values are not equal

(2) compares the magnitude of first two operands, and branches if their values are equal

(3) compares the magnitude of second two operands, and branches if their values are not equal

(4) compares the magnitude of second two operands, and branches if their values are equal

159. 8257 is _____

(1) programmable peripheral interface (PPI)

(2) direct memory access controller (DMA)

(3) universal sunchronous Asynchronous reciever transmitter

(4) none

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160. The number of timers present in 8051 controller

(1) 2 timers (2) 4 timers

(3) 8 timers (4) 10 timers

161. The first microprocessor built by intel corporation was called

(1) 8008 (2) 8080

(3) 4004 (4) 8800

162. In which register instruction is decoded prepared and ultimately executed

(1) instruction register (2) current register

(3) both (1) and (2) (4) none of these

163. The gamma of the picture tube is

(1) 0.4545 (2) 1.0

(3) 1.4 (4) 2.2

164. The width of a vertical sync pulse with its narrations the time of

(1) six half – lines (2) five half – lines

(3) four half – lines (4) three half – lines

165. A typical value of vidicon dark current is

(1) 0.2 μA (2) about 20 μA

(3) 200 μA (4) 2000 μA

166. Which system can be used for both recording and playback ?

(1) CEO (2) VHD

(3) laser disk (4) VHS

167. The hue 180^0 out of phase with red is

(1) cyan (2) yellow

(3) green (4) blue

168. We have a channel with a I-MHz bandwidth. The SNR for this channel is 63. What is the appropriate bit rate ?

(1) 6 Mbps (2) 8 Mbps

(3) 10 Mbps (4) 12 Mbps

169. What device separates a single network into two segments but lets the two segments appear as one to higher protocols ?

(1) switch (2) bridge

(3) gateway (4) router

170. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN ?

(1) CDMA (2) CSMA/CA

(3) ALOHA (4) CSMA/CD

171. Bluetooth transceiver devices operate in _____ band.

(1) 2.4 GHz ISM (2) 2.5 GHz ISM

(3) 2.6 GHz ISM (4) 2.7 GHz ISM

172. An ATM cell has the payload field of

(1) 32 bytes (2) 48 bytes

(3) 64 bytes (4) 28 bytes

173. Which of these is not an advantage of optical fibres ?

(1) easy installation and maintenance (2) immune to electromagnetic interference

(3) less signal attenuation (4) greater immunity to tapping

174. What is FRAD in framer relay network ?

(1) FRAD assemble and disassemble the frames coming from other protocols

(2) FRAD is used for modulation and demodulation

(3) FRAD is used for error detection

(4) FRAD is used for error correction

175. The early effect in a bipolar junction transistor is caused by

(1) fast turn ON (2) fast turn OFF

(3) large collector – base reverse bias (4) large emitter – base forward bias

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176. A silicon PN junction is forward biased with a constant current at room temperature. When the temperature is increased by 10^0C, the forward bias voltage across the PN junction

(1) increases by 60 mV
(2) decreases by 60 mV
(3) increases by 25 mV
(4) decreases by 25 mV

177. Drift current in semiconductors depends upon

(1) only the electric field
(2) only the carrier concentration gradient
(3) both the electric field and the carrier concentration
(4) both the electric field and the carrier concentration gradient

178. In a multi – stage RC coupled amplifier the coupling capacitor

(1) limits the low frequency response
(2) limits the high frequency response
(3) Does not affect the frequency response
(4) block the DC component without affecting the frequency response

179. Calculate the voltage regulation of a power supply having V_{NL} = 50 V and V_{FL} = 48 V.

(1) 4.17%
(2) 5.2%
(3) 6.2%
(4) 7.1%

180. For an op-amp having a slew rate SR = 5 V/ms, what is the maximum closed - loop voltage gain that can be used when the input signal varies by 0.2 in 10ms ?

(1) 150
(2) 200
(3) 250
(4) 300

181. A practical op-amp has very _____ input impedance, very _____ output impedance, very _____ open - loop voltage gain, and _____ band width.

(1) high, low, high, wide
(2) high, high , low, narrow
(3) low, high, high, wide
(4) low, low, low. wide

182. Ideally, for linear operation, a transistor should be biased so that the Q – point is

(1) near saturation
(2) near cutoff
(3) where IC is maximum
(4) halfway between cutoff and saturation

183. The saturation region is defined by V_{CE} _____ V_{CEsat}.

(1) >
(2) <
(3) ≤
(4) ≥

184. A certain transistor has I_C = 15 mA and I_B = 167 μA; β_{DC} is :

(1) 15
(2) 167
(3) 0.011
(4) 90

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185. The frequency of oscillation of an astable multivibrator depends mainly on

(1) value of collector load resistors
(2) RC values of the circuit
(3) value of transistor beta
(4) width of the input pulse

186. Calculate the ripple of a filter output having a 20 – V dc component and a 1.7 V_r (rms) ac components

(1) 6%
(2) 8.5%
(3) 85%
(4) 58%

187. An emittter followers has high input impedance because

(1) large emitter resistance is used
(2) large biasing resistance is used
(3) there is negative feedback in the base emitter circuit.
(4) the emitter - base junction is highly reverse biased.

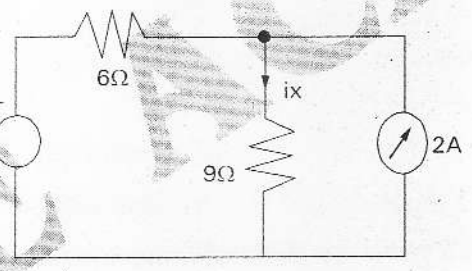
188. Which JFET configuration would connect a high–resistance signal source to a low resistance load ?

(1) common gate
(2) common source
(3) source follower
(4) common drain

189. UJT exhibits negative resistance region

(1) before the peak point
(2) between peak and valley points
(3) after the valley point
(4) does not exhibit

190. The current i_x in the network is :



(1) 1A
(2) $\frac{1}{2}$ A
(3) $\frac{1}{3}$ A
(4) $\frac{4}{5}$ A

191. In order to apply superposition theorem, it is necessary that the network be only

(1) linear and reciprocal
(2) time-invariant and reciprocal
(3) linear and time-invariant
(4) linear

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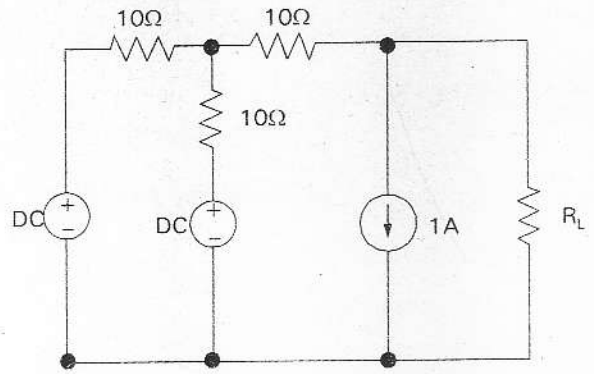
192. The Q-factor of a parallel resonance circuit consisting of an inductance of value 1 mH, capacitance of value 10^{-5}F and a resistance of 100 ohms is

(1) 1 (2) 10

(3) 20 (4) 100

193. Find the value of R_L such that the power transferred to R_L is maximum.



(1) 15 Ohms (2) 20 Ohms

(3) 25 Ohms (4) 30 Ohms

194. For parallel RLC circuit, which one of the following statement is NOT correct ?

(1) the bandwidth of the circuit decreases if R is increased.

(2) the bandwidth of the circuit remains same if L is increased.

(3) at resonance, input impedance is a real quantity.

(4) at resonance, the magnitude of input impedance attains its minimum value.

195. A network contains linear resistors and ideal voltage sources. If values of all the resistors are doubled, then the voltage across each resistor is :

(1) halved (2) doubled

(3) increases by four times (4) not changed

196. For a transmission line at higher frequency, attenuation constant P is

(1) proportional to frequency (2) inversely proportinal to frequency

(3) independent of frequency (4) proportional to speed

197. In a mismatched transmission line, the voltage node and the nearest current node are separated by a distance of

(1) λ (2) $\frac{\lambda}{2}$

(3) $\frac{\lambda}{4}$ (4) $\frac{3\lambda}{4}$

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198. The main advantage of the null balance technique of measurement is that

(1) it does not load the medium
(2) it gives a centre zero value at its input
(3) it gives quick measurement
(4) it is not affected by temperature variation

199. A meter having a senstivity of 2kΩ/V is used for the measurement of voltage across a circuit having an open circuit voltage of 8V. What is the reading of the meter at its 10V scale ?

(1) 5.72V
(2) 6.51V
(3) 7.62 V
(4) 7.91V

200. Which amplifier is used in an electronic multimeter ?

(1) power amplifier
(2) buffer amplifier
(3) differential amplifier
(4) wideband amplifier

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KEY

101) 3	102) 3	103) 3	104) 2	105) 2	106) 2	107) 3	108) 3	109) 3	110) 3
111) 1	112) 2	113) 3	114) 1	115) 2	116) 2	117) 4	118) 3	119) 3	120) 2
121) 4	122) 1	123) 3	124) 2	125) 4	126) 1	127) 2	128) 2	129) 2	130) 2
131) 2	132) 1	133) 1	134) 2	135) 2	136) 3	137) 1	138) 2	139) 2	140) 4
141) 1	142) 2	143) 3	144) 2	145) 4	146) 2	147) 2	148) 1	149) 2	150) 2
151) 3	152) 1	153) 2	154) 2	155) 2	156) 3	157) 4	158) 1	159) 2	160) 1
161) 3	162) 1	163) 4	164) 1	165) 1	166) 4	167) 1	168) 1	169) 2	170) 2
171) 1	172) 2	173) 1	174) 1	175) 3	176) 4	177) 3	178) 1	179) 1	180) 3
181) 1	182) 4	183) 3	184) 4	185) 2	186) 2	187) 3	188) 3	189) 2	190) 1
191) 4	192) 2	193) 1	194) 4	195) 4	196) 1	197) 3	198) 1	199) 3	200) 3

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