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Question Bank (ECE)

1. When collection of various computers seems a single coherent system to its client, then it is called

a) computer network
b) distributed system
c) both (a) and (b)
d) none of the mentioned

2. In computer network nodes are
a) the computer that originates the data
b) the computer that routes the data
c) the computer that terminates the data
d) all of the mentioned

3. Communication channel is shared by all the machines on the network in
a) broadcast network
b) unicast network
c) multicast network
d) none of the mentioned

4. Bluetooth is an example of
a) personal area network
b) local area network
c) virtual private network
d) none of the mentioned

5. A _____ is a device that forwards packets between networks by processing the routing information included in the packet.
a) bridge
b) firewall
c) router
d) all of the mentioned

6. A list of protocols used by a system, one protocol per layer, is called
a) protocol architecture
b) protocol stack
c) protocol suit
d) none of the mentioned

7. Network congestion occurs
a) in case of traffic overloading
b) when a system terminates
c) when connection between two nodes terminates
d) none of the mentioned

8. Which one of the following extends a private network across public networks?
a) local area network
b) virtual private network
c) enterprise private network
d) storage area network

9. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are
a) Added
b) Removed
c) Rearranged
d) Modified

10. The structure or format of data is called
a) Syntax
b) Semantics
c) Struct
d) None of the mentioned

11. The first Network
a) CNNET
b) NSFNET
c) ASAPNET
d) ARPANET

12. A set of rules that governs data communication
a) Protocols
b) Standards
c) RFCs
d) None of the mentioned

13. Three or more devices share a link in _____ connection
a) Unipoint
b) Multipoint
c) Point to point
d) None of the mentioned

14. TCP/IP .... layer corresponds to the OSI models to three layers.
A) Application   B) Presentation
C) Session   D) Transport

15. Which of the transport layer protocols is connectionless?
A) UDP   B) TCP
C) FTP   D) Nvt

16. In Microprocessor

a. program is stored in memory and data is stored in the registers.

b. program is stored in the registers and data is stored in memory.

c. both program and data are stored in the memory.

d. both program and data are stored in the registers.

17 A Microprocessor contains.

a. most of the control and arithmetic logic functions of a computer.

b. most of the RAM .

c. most of the ROM.

d. peripheral drivers.

18. A PC in a micro-computer.

a. counts the number of instructions executed in a run.

b. counts the number of programs run after startying.

c. counts the points to the next executable instruction

d. points to the present instruction being executed.

19. An instruction cycle is made up of:

a. one or more execute cycles

b. one or more fetch cycles

c. one opcode and one execute cycle

d. none of the above.

20. The number of minimum clock cycles in a machine cycle for 8085 are.

a. 1

b. 2

c. 3

d. 5

21. In a 8-bit microprocessor ,the fetch reqired to fetch a 8 bytes instruction will be:

a. 1

b. 2

c. 3

d. depends on computer design

22. The maximun integer ahich can be stored on an 8-bit accunulator is

a. 2kb

b. 200

c. 224

d. 255.

23. The address bus of intel 8085 is 16 bit wide and hence the memory which can be accessed by this address bus is :

a.112

b.4kb

c.16kb

d.64 kb

24. A byte corresponds to

(a) 4 bits

(b) 8 bits

 (c) 16 bits

 (d) 32 bits

25. A gigabyte represents

(a) 1 billion bytes

(b) 1000 kilobytes

 (c) 230 bytes

(d) 1024 bytes

26. A megabyte represents

(a) 1 million bytes

(b) 1000 kilobytes

(c) 220 bytes

(d) 1024 Bytes

27. A Kb corresponds to

(a) 1024 bits

 (b) 1000 bytes

(c) 210 bytes

(d) 210 bits

28. A superscalar processor has

(a) multiple functional units

(b) a high clock speed

(c) a large amount of RAM

(d) many I/O ports

29. A 32-bit processor has

(a) 32 registers

 (b) 32 I/O devices

 (c) 32 Mb of RAM

(d) a 32-bit bus or 32-bit registers

30. A 20-bit **address bus** allows access to a memory of capacity

 (a) 1 Mb

 (b) 2 Mb

 (c) 32Mb

 (d) 64 Mb

31. A 32-bit **address bus** allows access to a memory of capacity

(a) 64 Mb

(b) 16 Mb

(c) 1 Gb

(d) 4 Gb

32.!Clock speed is measured in

(a) bits per second

(b) baud

(c) bytes

(d) Hertz

33. An FPU

(a) makes integer arithmetic faster

(b) makes pipelining more efficient

(c) increases RAM capacity

(d) makes some arithmetic calculations faster

34. Pipelining improves CPU performance due to

(a) reduced memory access time

(b) increased clock speed

(c) the introduction of parallellism

(d) additional functional units

35. The system bus is made up of

(a) data bus

(b) data bus and address bus

(c) data bus and control bus

(d) data bus, control bus and address bus

36. A machine cycle refers to

(a) fetching an instruction

(b) clock speed

(c) fetching, decoding and executing an instruction

(d)executing an instruction

37. A Pentium processor comprises

(a) more than 1 million transistors

(b) more than 3 million transistors

(c) 500,000 transistors

(d) 900,000 transistors

38. Which of the following is **NOT** a type of processor

(a) PowerPC 601

(b) Motorola 8086

(c) Motorola 68000

(d) Intel Pentium

39. An RS-232 interface is

(a) a parallel interface

(b) a serial interface

(c) printer interface

(d) a modem interface

40. Multiprogramming refers to

(a) having several programs in RAM at the same time

(b)multitasking

(c) writing programs in multiple languages

(d) none of the previous

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42. Multiprogramming is a prerequisite for

(a) multitasking

(b) an operating system

(c) to run more than one program at the same time

(d) none of the above

43. Timesharing is the same as

(a) multitasking

(b) multiprogramming

(c) multiuser

(d)none of the previous

44. Virtual memory is

(a) related to virtual reality

(b) a form of ROM

(c) a form of RAM

(d) none of the previous

45. Multiprocessing is

(a) same as multitasking

(b) same as multiprogramming

(c)multiuser

(d) involves using more than one processor at the same time

46. A compiler is

(a) a fast interpreter

(b) slower than an interpreter

(c) converts a program to machine code

(d) none of the previous

47. An interpreter is

(a) faster than a compiler

(b) translates and executes programs statement by statement

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(d) none of the previous

48. The Pentium processor is

(a) 16-bit

(b) 32-bit

(c) 64 bit

(d) 8-bit

49. The IBM/Motorola PowerPC 601 processor is

(a) 16-bit

(b) 32-bit

(c) 64 bit

(d) 8-bit

50. An assembly language instruction

(a) always has a label

(b) always takes at least 1 operand

(c) always has an operation field

(d) always modifies the status register

51. An arithmetic instruction always modifies the

(a) stack pointer

(b) status register

(c) program counter

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(a) always cause a transfer of control

(b) always involves the use of the status register

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54. A data movement instruction will

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103. Memory mapped I/O involves

(a) transferring information between memory locations

(b) transferring information between registers and memory

(c) transferring information between the CPU and I/O devices in the same way as

between the CPU and memory

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104. A hardware interrupt is

(a) also called an internal interrupt

(b) also called an external interrupt

(c) an I/O interrupt

(d) a clock interrupt

105. An assembly language program is typically

(a) non-portable

(b) shorter than an equivalent HLL program

(c) harder to read than a machine code program

(d)slower to execute than a compiled HLL program

106. Programs are written in assembly language because they

(a) run faster than HLL programs

(b) are portable

(c) easier to write than machine code programs

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that are not usually provided by a HLL

107. An assembly language program is translated to machine code by

(a) an assembler

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108. An assembly language directive is

(a) the same as an instruction

(b) used to define space for variables

(c) used to start a program

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109. Which of the following is **not** part of the processor

(a) the ALU

(b) the CU

(c) the registers

(d) the system bus

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120. It refers to the dielectric material of an optical fiber that surrounds the core

    a. cladding
    b. armor
    c. shield
    d. cover

121. It is made of from semiconductor material such as aluminum gallium arsenide or gallium arsenide phosphide.

    a. APD
    b. ILD
    c. LED
    d. PIN diode

122. An absorption loss caused by valence electrons in the silica material from which fibers are manufactured.

    a. UV absorption
    b. ion resonance absorption
    c. modal dispersion
    d. infrared absorption

123. The loss in signal power as light travels down the fiber.

    a. Attenuation
    b. Scattering
    c. Propagation
    d. Absorption

124. The different angles of entry of light into an optical fiber when the diameter of the core is many times the wavelength of the light transmitted is known as

    a. Refraction
    b. Emitter
    c. Mode
    d. sensor

125.The wavelength of the light has no role in

a. Polarization
b. Interference
c. Diffraction
d. Resolving power

126. One micron is equivalent to

a. 1 mm
b. 1 um
c. 1 nmd
d. 1 pm

127. If a fiber optic system has a rise time of 16 ns, the source rise time is 1.50 ns and the detector rise time is 2 ns, what is the cable rise time?

a. 12.50 ns
b. 9 ns
c. 14 ns
d. 6 ns

128. A non-coherent light source for optical communications system.

a. APD
b. LED
c. ILD
d. PIN diode

129. Type of fiber that has the highest modal dispersion.

a. step index single mode
b. step index multimode
c. graded index mode
d. graded index multimode

130. Fiber optic cable operates near _____ frequencies.

a. 2 GHz
b. 20 MHz
c. 200 MHz
d. 800 THz

131. Band of light rays that are too small to be seen by human eye.

a. Visible
b. Infrared
c. Ultraviolet
d. amber

132. The most common device used as light detector in fiber optic communication system.

a. LED
b. Darlington phototransistor
c. APDs
d. PIN diode

133. Calculate the energy of the infrared light at 1.55 um.

a. 1.28 x 10-19J
b. 1.60 x 1019J
c. 1.22 x 10-16J
d. 1.90 x 10-14J

134. Any small element of space in the path of a wave may be considered as a source of secondary wavelet.

a. De Morgan's Theorem
b. Faraday's Law
c. Huygen's Principle
d. Fresnel's Law of Optics

135. A device that reduces the intensity of light in fiber optics communications system.

a. Reducer
b. var meter
c. optical attenuator
d. compressor

136. The core of an optical fiber has

a. has a medium index of refraction
b. a lower index of refraction than the cladding

137. The binary number 10101 is equivalent to decimal number ....

1. 19
2. 12
3. 27
4. 21

138. The universal gate is ………………

1. NAND gate
2. OR gate
3. AND gate
4. None of the above

139. The inverter is ……………
1. NOT gate
2. OR gate

3. AND gate
4. None of the above

140. The inputs of a NAND gate are connected together. The resulting circuit is ………….
1. OR gate
2. AND gate
3. NOT gate
4. None of the above

141. The NOR gate is OR gate followed by ………………
1. AND gate
2. NAND gate
3. NOT gate
4. None of the above

142. The NAND gate is AND gate followed by …………………
1. NOT gate
2. OR gate
3. AND gate
4. None of the above

143. Digital circuit can be made by the repeated use of ………………
1. OR gates
2. NOT gates
3. NAND gates
4. None of the above

144. The only function of NOT gate is to ……………..
1. Stop signal
2. Invert input signal
3. Act as a universal gate
4. None of the above

145. When an input signal 1 is applied to a NOT gate, the output is ………………
1. 0
2. 1
3. Either 0 & 1
4. None of the above

146. In Boolean algebra, the bar sign (-) indicates ………………..
1. OR operation
2. AND operation
3. NOT operation
4. None of the above

147. The resolution of an n bit DAC with a maximum input of 5 V is 5 mV. The value of n is …….
1. 8
2. 9
3. 10
4. 11

148. 2's complement of binary number 0101 is ………..
1. 1011
2. 1111
3. 1101
4. 1110

149. An OR gate has 4 inputs. One input is high and the other three are low. The output is …….
1. Low
2. High
3. alternately high and low

4. may be high or low depending on relative magnitude of inputs

150. Decimal number 10 is equal to binary number ……………
1. 1110
2. 1010
3. 1001
4. 1000

151. Both OR and AND gates can have only two inputs.
1. True
2. False

152. A device which converts BCD to seven segments is called ……..
1. Encoder
2. Decoder
3. Multiplexer
4. None of these

153. In 2's complement representation the number 11100101 represents the decimal number ……………
1. +37
2. -31
3. +27
4. -27

154. A decade counter skips ………..
1. binary states 1000 to 1111
2. binary states 0000 to 0011
3. binary states 1010 to 1111
4. binary states 1111 to higher

155. BCD input 1000 is fed to a 7 segment display through a BCD to 7 segment decoder/driver. The segments which will lit up are ………….
1. *a, b, d*
2. *a, b, c*
3. all
4. *a, b, g, c, d*

156. A ring counter with 5 flip flops will have ………. states.
1. 5
2. 10
3. 32
4. Infinite

157. For the gate in the given figure the output will be ………..
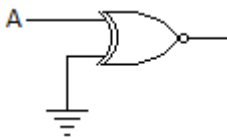
1. 0
2. 1
3. A
4. Ā

158. In the expression A + BC, the total number of minterms will be ………
1. 2

2. 3
3. 4
4. 5

159. The circuit in the given figure is a …………. gate.
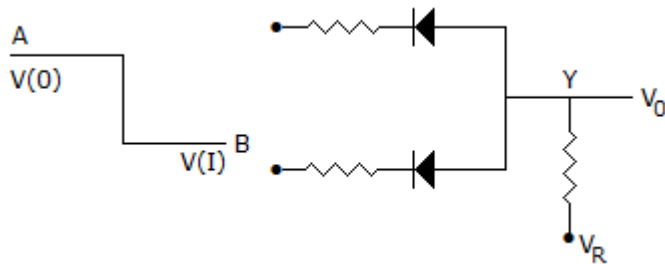
1. positive logic OR gate
2. negative logic OR gate
3. negative logic AND gate
4. positive logic AND gate

160. Which of the following is non-saturating?
1. TTL
2. CMOS
3. ECL
4. Both 1 and 2

161. The number of digits in octal system is ………
1. 8
2. 7
3. 9
4. 10

162. The access time of a word in 4 MB main memory is 100 ms. The access time of a word in a 32 kb data cache memory is 10 ns. The average data cache bit ratio is 0.95. The efficiency of memory access time is ………
1. 9.5 ns
2. 14.5 ns
3. 20 ns
4. 95 ns

163. The expression Y = pM (0, 1, 3, 4) is …………..
1. POS
2. SOP
3. Hybrid
4. none of these

164. An 8 bit DAC has a full scale output of 2 mA and full scale error of ± 0.5%. If input is 10000000 the range of outputs is ………….
1. 994 to 1014 μA
2. 990 to 1020 μA
3. 800 to 1200 μA
4. none of the above

165. Decimal 43 in hexadecimal and BCD number system is respectively……. and ……..

1. B2 and 01000011
2. 2B and 01000011
3. 2B and 00110100
4. B2 and 01000100

166. The circuit of the given figure realizes the function …………
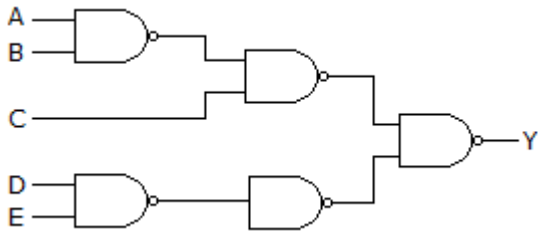
1. $Y = (\bar{A} + \bar{B})C + \overline{DE}$

2. $Y = \bar{A} + \bar{B} + \bar{C} + \bar{D} + \bar{E}$

3. $AB + C + DE$

4. $AB + C(D + E)$

167. An AND gate has two inputs A and B and one inhibit input 3, Output is 1 if

1. A = 1, B = 1, S = 1
2. A = 1, B = 1, S = 0
3. A = 1, B = 0, S = 1
4. A = 1, B = 0, S = 0

168. The greatest negative number which can be stored is 8 bit computer using 2's complement arithmetic is ……..
1. -256
2. -128
3. -255
4. -127

169. A JK flip flop has t_{pd}= 12 ns. The largest modulus of a ripple counter using these flip flops and operating at 10 MHz is ……..
1. 16
2. 64
3. 128
4. 256

170. The basic storage element in a digital system is ………….
1. flipflop
2. counter
3. multiplexer
4. encoder

171. In a ripple counter,

1. whenever a flipflop sets to 1, the next higher FF toggles
2. whenever a flipflop sets to 0, the next higher FF remains unchanged
3. whenever a flipflop sets to 1, the next higher FF faces race condition
4. whenever a flipflop sets to 0, the next higher FF faces race condition

172. A 12 bit ADC is used to convert analog voltage of 0 to 10 V into digital. The resolution is ……….
   1. 2.44 mV
   2. 24.4 mV
   3. 1.2 V
   4. none of these

173. For the truth table of the given figure Y = …………..

A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	0

   1. A + B + C
   2. $\bar{A}$ + BC
   3. $\bar{A}$
   4. $\bar{B}$

174. A full adder can be made out of …………
   1. two half adders
   2. two half adders and a OR gate
   3. two half adders and a NOT gate
   4. three half adders

175. If the functions w, x, y, z are as follows

$w = R + \bar{P}Q + \bar{R}S$,

$x = PQ\bar{R}\,\bar{S} + PQR\,\bar{S} + P\bar{Q}\,R\,\bar{S}$

$y = RS + \overline{PR + P\bar{Q}} + \overline{\bar{P}Q}$

$z = R + S + PQ + \overline{P\bar{Q}}.\bar{R} + P\bar{Q}.\bar{S}$

   1. w = z x = z
   2. w = z, x = y
   3. w = y
   4. w = y = z

176. The output of a half adder is ……….

1. Sum
2. Sum and Carry
3. Carry
4. none of these

177. A solid copper sphere, 10 cm in diameter is deprived of 1020 electrons by a charging scheme.
The charge on the sphere is _____

a) 160.2 C

b) -160.2 C

c) 16.02 C

d) -16.02 C

178. A lightning bolt carrying 15,000 A lasts for 100 s. If the lightning strikes an airplane flying at 2
km, the charge deposited on the plane is _____
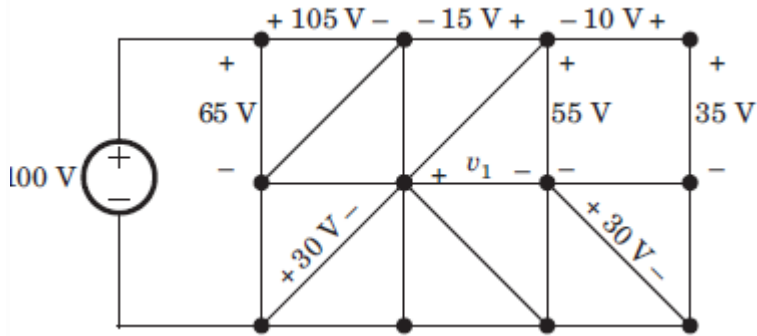
a) 13.33 C

b) 75 C

c) 1500 C

d) 1.5 C

179. If 120 C of charge passes through an electric conductor in 60 sec, the current in the conductor is
_____

a) 0.5 A

b) 2 A

c) 3.33 mA

d) 0.3 mA

180. The energy required to move 120 coulomb through 3 V is _____

a) 25 mJ

b) 360 J

c) 40 J

d) 2.78 mJ

181. Consider the circuit graph shown in figure below. Each branch of circuit graph represent a
circuit element. The value of voltage V1 is:

a) 30 V

b) 25 V

c) 20 V

d) 15

182. What will be the value of Req in the following Circuit?
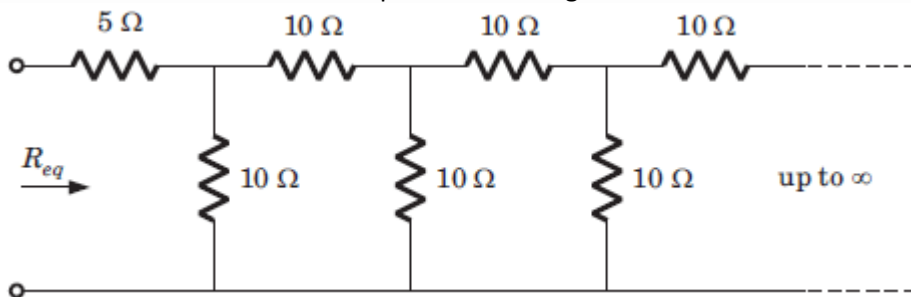
a) 11.86 ohm

b) 10 ohm

c) 25 ohm

d) 11.18

183.In the circuit the dependent source _____
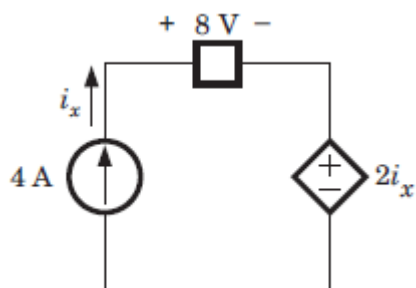
a) supplies 16 W

b) absorbs 16 W

c) supplies 32 W

d) absorbs 32 W

184. Twelve 6 ohm resistors are used to form an edge of a cube. The resistance between two diagonally opposite corner of the cube (in ohm) is _____

a) 5/6

b) 6/5

c) 5

d) 6

185.The energy required to charge a 10 µF capacitor to 100 V is _____

a) 0.1 J

b) 0.05 J

c) $5 \times 10^{(-9)}$ J

d) $10 \times 10^{(-9)}$ J

186. A capacitor is charged by a constant current of 2 mA and results in a voltage increase of 12 V in a 10 sec interval. The value of capacitance is _____

a) 0.75 mF

b) 1.33 mF

c) 0.6 mF

d) 1.67 mF

187. How many junction/s do a diode consist?

a) 0

b) 1

c) 2

d) 3

188. If the positive terminal of the battery is connected to the anode of the diode, then it is known as

a) Forward biased

b) Reverse biased

c) Equilibrium

d) Schottky barrier

189.During reverse bias, a small current develops known as

a) Forward current

b) Reverse current

c) Reverse saturation current

d) Active current

190. If the voltage of the potential barrier is V_0. A voltage V is applied to the input, at what moment will the barrier disappear?

a) V< V_0

b) V= V_0

c) V> V_0

d) V<< V_0

191. During the reverse biased of the diode, the back resistance decrease with the increase of the temperature. Is it true or false?

a) True

b) False

192. What is the maximum electric field when V_{bi}=2V , V_R=5V and width of the semiconductor is 7cm?
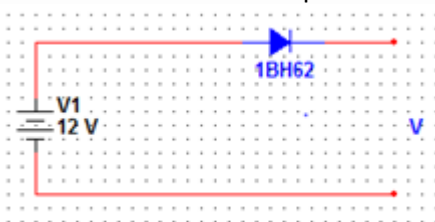
a) -100V/m

b) -200V/m

c) 100V/m

d) 200V/m

193.When the diode is reverse biased with a voltage of 6V and V_{bi}=0.63V. Calculate the total potential.

a) 6V

b) 6.63V

c) 5.27V

d) 0.63V

194.It is possible to measure the voltage across the potential barrier through a voltmeter?

a) True

b) False

195. What will be the output of the following circuit? (Assume 0.7V drop across the diode)

1BH62

V1
12 V

V

a) 12V

b) 12.7V

c) 11.3V

d) 0V

196. Which of the following formula represents the correct formula for width of the depletion region?

a) $W = \left\{2 \in \left(\frac{V_{bi}+V_R}{e}\right)\left[\frac{Na+Nd}{NaNd}\right]\right\}^{0.5}$

b) $W = \left\{2 \in \left(\frac{V_{bi}-V_R}{e}\right)\left[\frac{Na+Nd}{NaNd}\right]\right\}^{0.5}$

c) $W = \left\{2 \in \left(\frac{V_{bi}+V_R}{e}\right)\left[\frac{Na-Nd}{NaNd}\right]\right\}^{0.5}$

d) $W = \left\{2 \in \left(\frac{V_{bi}-V_R}{e}\right)\left[\frac{Na-Nd}{NaNd}\right]\right\}^{0.5}$

197 The percentage voltage regulation (V_L) is given by_____

a) $(V_{NL}-V_L)/V_{NL}*100$

b) $(V_{NL}+V_L)/V_{NL}*100$

c) $(V_{NL}-V_L)/V_L*100$

d) $(V_{NL}+V_L)/V_L*100$

198 The limiting value of the current resistor used in a Zener diode (when used as a regulator)

a) $(R)_{min}=[(V_{in})_{max} + V_Z/R$

b) $(R)_{min}=[(V_{in})_{max}-V_Z]/R$

c) $(R)_{min}=[(V_{in})_{max}-V_Z]R$

d) $(R)_{min}=[(V_{in})_{max}+ V_Z]R$

199 When the regulation by a Zener diode is with a varying input voltage, what happens to the voltage drop across the resistance?

a) Decreases

b) Has no effect on voltage

c) Increases

d) The variations depend on temperature

200. In the given limiter circuit, an input voltage $V_i=10\sin100\pi t$ is applied. Assume that the diode drop is 0.7V when it's forward biased. The zener breakdown voltage is 6.8V. The maximum and minimum values of outputs voltage are _____
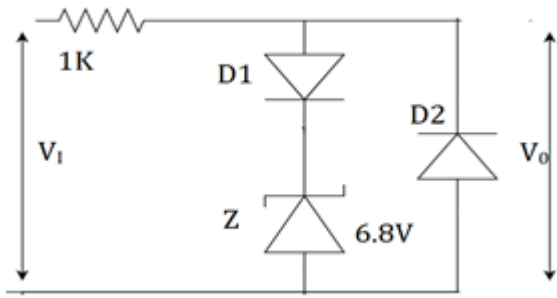
a) 6.1V,-0.7V

b) 0.7V,-7.5V

c) 7.5V,-0.7V

d) 7.5V,-7.5V

201.Determine the maximum and minimum values of load current for which the Zener diode shunt regulator will maintain regulation when V_{IN}=24V and R=500Ω. The Zener diode has a V_Z=12V and (I_Z)MAX=90mA.

a) 40mA, 0mA respectively

b) 36mA, 5mA respectively

c) 10mA, 6mA respectively

d) 21mA, 0mA respectively

202.Determine the minimum value of load resistance that can be used in the circuit with (I_Z)Min=3mA. The input voltage is 10V and the resistance R is 500Ω. The Zener diode has a V_Z=6V 0and (I_Z)MAX=90mA.

a) 1KΩ

b) 2.4KΩ

c) 1.2KΩ

d) 3.6KΩ

203 A Zener regulator has to handle supply voltage variation from 19.5V to 22.5V. Find the magnitude of regulating resistance, if the load resistance is 6KΩ. The Zener diode has the following specifications: breakdown voltage =18V, (I_Z)Min=2μA, maximum power dissipation=60mW and Zener resistance =20Ω.

a) 0 < R < 500Ω

b) 77.8 < R < 500Ω

c) 77.8 < R < 100Ω

d) 18 < R < 500Ω

204 A transistor series regulator has the following specifications: V_{IN}=15V, V_Z=8.3V, β=100, R=1.8KΩ, R_L=2KΩ. What will be the Zener current in the regulator circuit?

a) 4.56mA

b) 3.26mA

c) 4.56mA

d) 3.68mA

205 When is a regulator used?

a) when there are small variations in load current and input voltage

b) when there are large variations in load current and input voltage

c) when there are no variations in load current and input voltage

d) when there are small variations in load current and large variations in input voltage

206.A transistor in a series voltage regulator acts like a variable resistor. The value of its resistance is determined by _____

a) emitter current

b) base current

c) collector current

d) it is not controlled by the transistor terminals

207. An amplifier operating from ±3V provide a 2.2V peak sine wave across a 100 ohm load when provided with a 0.2V peak sine wave as an input from which 1.0mA current is drawn. The average current in each supply is measured to be 20mA. What is the amplifier efficiency?

a) 20.2%

b) 25.2%

c) 30.2%

d) 35.2%

208. In order to prevent distortion in the output signal after amplification, the input signal must be

a) Higher than the positive saturation level of the amplifier

b) Lower than the negative saturation level of the amplifier

c) Must lie with the negative and the positive saturation level of the amplifier

d) Both higher than the positive saturation level of the amplifier and lower than the negative saturation level of the amplifier

209.The voltage gain of the amplifier is 8 and the current gain is 7. The power gain of the amplifier is

a) 56 db

b) 17.481 db

c) 34.963 db

d) 1 db

210. Statement 1: Voltage gain of -5 means that the output voltage has been attenuated.

Statement 2: Voltage gain of -5db means that the output voltage has been attenuated.

a) Statement 1 and Statement 2 are true

b) Statement 1 and Statement 2 are false

c) Only Statement 1 is true

d) Only Statement 2 is true

211. Which of the following isn't true?

a) Both transformer and amplifier can provide voltage gain

b) Both transformer and amplifier can provide current gain

c) Both transformer and amplifier can provide power gain

d) None of the mentioned

212. Symmetrically saturated amplifiers operating in clipping mode can be used to convert a sine wave to a

a) Square wave

b) Pseudo Square wave

c) Sawtooth wave

d) Triangular wave

213. What is meant by stability of the an amplified signal?

a) The amplified signal must have a finite amplitude

b) The amplified signal should not have self oscillation

c) The input and the output signal must be proportional

d) The ratio of the input and the output signal must be finite

214. If A_v, A_i and A_p represents the voltage gain, current gain and power gain ratio of an amplifier which of the below is not the correct expression for the corresponding values in decibel?

a) Current gain: 20 log A_i db

b) Voltage gain: 20 log A_v db

c) Power gain: 20 log A_p db

d) Power gain: 10 log A_p

215. An amplifier has a voltage gain of 100 V/V and a current gain of 1000A/A. the value of the power gain decibel is

a) 30 db

b) 40 db

c) 50 db

d) 60 db

216. The unit of voltage gain is

a) It has no units, it is a ratio

b) Decibels (db)

c) All of the mentioned

d) None of the mentioned

217. Source is a basic network element which supplies power to the networks.

a) True

b) False

218. The dependent sources are of _____ kinds.

a) 5

b) 2

c) 3

d) 4

219. The constant g_m has dimension of _____

a) Ampere per volt

b) Ampere

c) Volt

d) Volt per ampere

220. In CCVS, voltage depends on the control current and the constant called _____

a) Transconductance

b) Transresistance

c) Current Gain

d) Voltage Gain

221. Every circuit is a network, but all networks are not circuits.

a) True

b) False

222.Which of the following is not an example of a linear element?

a) Resistor

b) Thermistor

c) Inductor

d) Capacitor

223. Find the odd one out.

a) Resistor

b) Voltage-dependent resistor(VDR)

c) Temperature-dependent resistor(Thermistor)

d) Light-dependent resistor(LDR)

224. Which of the following is an Active element?

a) Resistor

b) Inductor

c) Capacitor

d) OP-AMP

225. A semiconductor diode is an _____ element.

a) Bilateral

b) Unilateral

c) Active

d) Passive

226. Example of distributed element is _____

a) Resistor

b) Thermistor

c) Semiconductor diode

d) Transmission lines

227.Potential difference in electrical terminology is known as?

a) Voltage

b) Current

c) Resistance

d) Conductance

228. The circuit in which current has a complete path to flow is called _____ circuit.

a) short

b) open

c) closed

d) open loop

229. If the voltage-current characteristics is a straight line through the origin, then the element is said to be?

a) Linear element

b) Non-linear element

c) Unilateral element

d) Bilateral element

230. The voltage across R_1 resistor in the circuit shown below is?
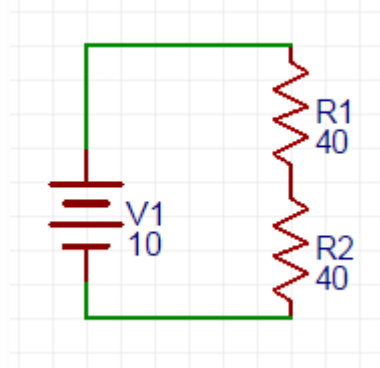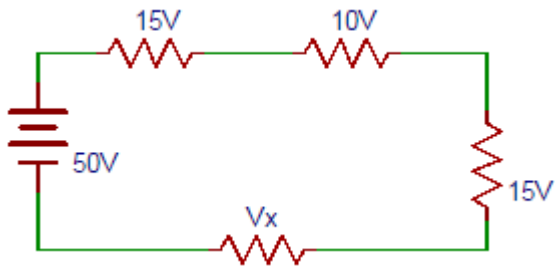

a) 10

b) 5

c) 2.5

d) 1.25

231. The energy stored in the inductor is?

a) $Li^2/4$

b) $Li^2/2$

c) Li^2

d) $Li^2/8$

232. How many types of dependent or controlled sources are there?

a) 1

b) 2

c) 3

d) 4

233. Find the voltage V_x in the given[/expand] circuit.

a) 10

b) 20

c) 30

d) 40

234. If the resistances 1Ω, 2Ω, 3Ω, 4Ω are parallel, then the equivalent resistance is?

a) 0.46Ω

b) 0.48Ω

c) 0.5Ω

d) 0.52Ω

235. Find total current(mA) in the circuit.
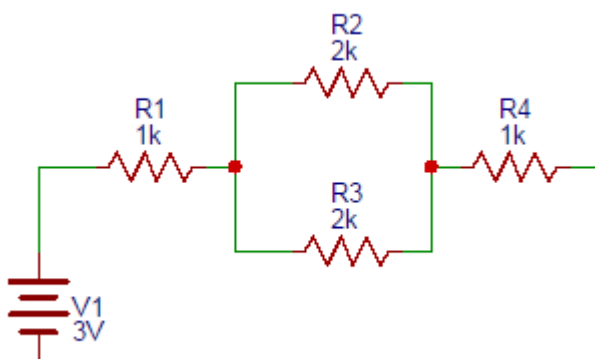
a) 1

b) 2

c) 3

d) 4

236. If the resistances 3Ω, 5Ω, 7Ω, 9Ω are in series, then their equivalent resistance(Ω) is?

a) 9

b) 20

c) 24

d) 32

237.Kirchhoff's Current law is based on law of conservation of

a) energy

b) momentum

c) mass

d) charge

238.The current law represents a mathematical statement of fact that

a) voltage cannot accumulate at node

b) charge cannot accumulate at node

c) charge at the node is infinite

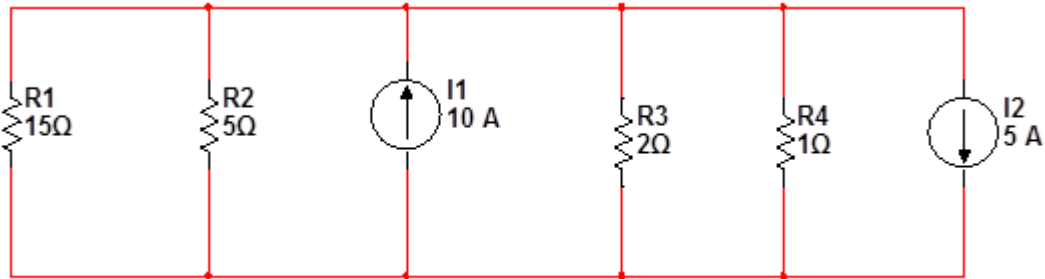d) none of the mentioned

239.Kirchhoff's current law is applied at

a) loops

b) nodes

c) both loop and node

d) none of the mentioned

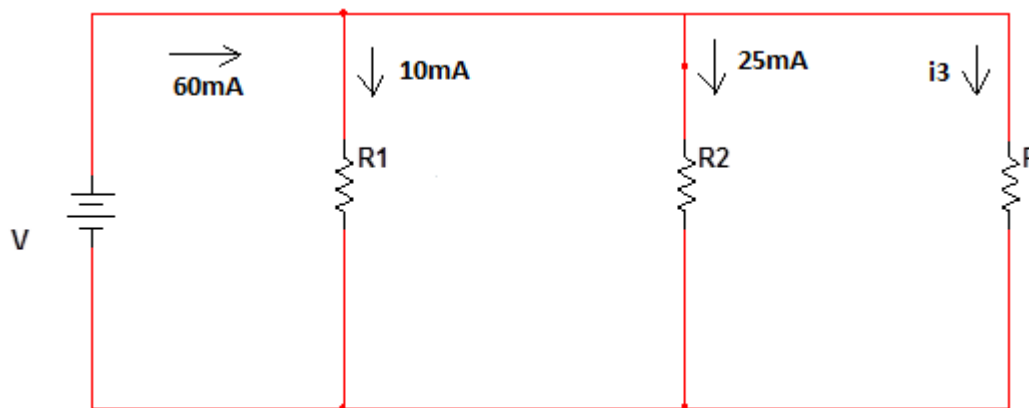240.Determine the current in all resistors in the circuit shown below:
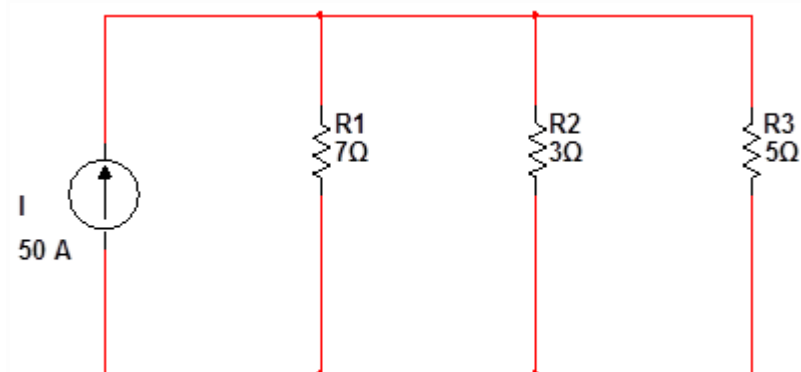
a) 2A, 4A, 11A

b) 5A, 4.8A, 9.6A

c) 9.3A, 20.22A, 11A

d) 10.56A, 24.65A, 14.79A

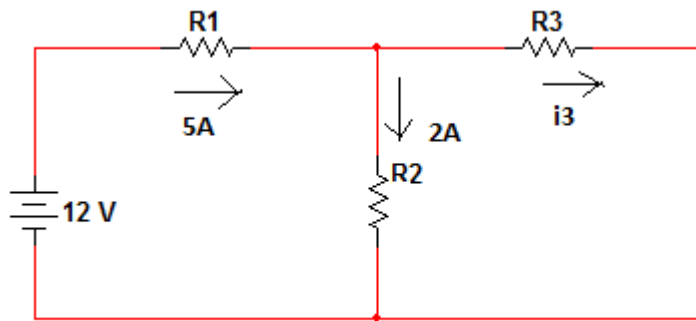241. For the circuit below , find the voltage across 5Ω resistor and the current through it

a) 1.93 V

b) 2.83 V

c) 3.5 V

d) 5.7 V

242.Determine the current through the resistor R3 shown in the figure using KCL

a) 25mA

b) 10mA

c) 20mA

d) 35mA

243.Find the current i3 in the circuit shown below

R1

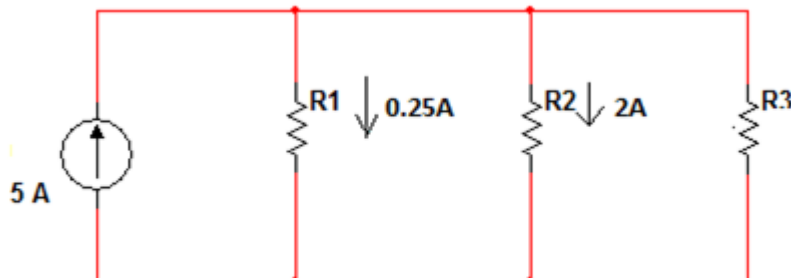R3

5A

i3

2A

R2

12 V

a) 2A

b) 1A

c) 3A

d) 0.5A

244. Kirchhof's current law can be mathematically stated as :

a) $\sum_{k=0}^{n} I = 0$

b) $i^2 \sum_{k=0}^{n} I = 0$

c) $i \sum_{k=0}^{n} I = 0$

d) none of the mentioned

245.Determine the current if a 20 coulomb charge passes a point in 0.25 seconds

a) 10 A

b) 20 A

c) 2 A

d) 80 A

246.Find the current through the branch containing resistance R3

R1 0.25A

R2 2A

R3

5 A

a) 2A

b) 3.25A

c) 2A

d) 2.75A

247.Kirchhoff's voltage law is based on principle of conservation of

a) energy

b) momentum

c) mass

d) charge

248.In a circuit with more number of loops, which law can be best suited for the analysis?

a) KCL

b) Ohm's law

c) KVL

d) None of the mentioned

249.Determine the unknown voltage drop in the circuit below

a) 11V

b) 10V

c) 19V

d) 5V

250.Determine V in the circuit

a) 28.8V

b) 34.4v

c) -28.8V

d) 28V

251. Find V and I in the circuit

a) -39V , -4.875A

b) 39V , -4.875A

c) -39v , 4.875a

d) 39V , 4.875A

252.Mathematically, Kirchhoff's Voltage law can be as

a) $\sum_{k=0}^{n}(V) = 0$

b) $V2\sum_{k=0}^{n}(V) = 0$

c) $V\sum_{k=0}^{n}(V) = 0$

d) none of the mentioned

253. Determine the value of V and the power supplied by the independent current source

a) 20V , 300mw

b) 27V , 498mW

c) 26.6v , 532mW

d) 25V , 322mW

254. Determine V in the circuit
a) -11.6V
b) 23.2V
c) -23.2V
d) 11.6V

255.Find V and I in the circuit

a) 19V, 0.0633A

b) -19V, 0.0633A

c) 19V, -0.0633A

d) -19V,- 0.0633A