SAIMEDHA ECET COACHING CENTRE
TIRUPATI * HYDERABAD * VIJAYAWADA Ph:2255792 Ph: $24611681 \quad$ Ph: 5514010

Electrical Engineering
Topic: Pre-ECET
Max. Marks:100
101. Which of the following material has least specific Resistance

1) copper
2) silver
3) aluminum
4) iron
102. The equivalent resistance of the network is
1) $200 \Omega$
2) $400 \Omega$
3) $600 \Omega$
4) $1600 \Omega$
103. The insulation resistance of a cable is given by
1) $\frac{2.3 \rho}{2 \pi \mathrm{l}} \log \left(\mathrm{r}_{2} / \mathrm{r}_{1}\right)$
2) $\frac{\rho}{2 \pi l} \log \left(\frac{r_{2}}{r_{1}}\right)$
3) $\frac{\rho}{2 \pi \mathrm{l}} \log \left(\mathrm{r}_{1} / \mathrm{r}_{2}\right)$
4) none
104. A 200 AH battery is designed to deliver a continuous current flow of
1) 50 A for 4 hours
2) 25 A for 8 hours
3) 100 A for 2 hours
4) 200 A for 1 hour
105. In a series RLC circuit, if ' C ' is increased, what happens to the resonant frequency
1) it increases
2) it decreases
3 ) it remains the same 4) it is zero
106. Electric lines of force and equipotential surfaces
1) constitute a parallel network
2) constitute a mutually perpendicular network
3) are not related to each other
4) are at angle of $45^{\circ}$ to each other
107. A magnet is kept in air surrounded by an iron ring. The magnetic lines of force from the magnet will be
1) crowded in the ring 2 ) crowded in air
2) evenly distributed
3) none
108. The hysteresis cycle for the material of a transformer is
1) tall and narrow
2) tall and wide
3) short and narrow
4) short and wide
109. Which will draw least current
1) 40 w lamp
2) 40 w tube light
3) 40 w induction motor 4 ) 40 w computer
110. Alternators are usually star wound because
1) both lighting and power circuits can be supplied without using transformers
2) Neutral wire is required
3) lesser turns/phase are required
4) higher insulation is needed
111. For the same peak value, Which of the following wave has the least mean value?
1) sine
2) square
3) triangular
4) half wave rectified sine wave
112. In which lamp will be brighter
1) tungsten
2) sodium discharge lamp 3) H-Lmap
3) None
113. In 2 -watt meter method, the algebraic sum of the readings of two wattmeter's will indicate true power only if $\qquad$
1) the load is balanced 2) phase sequence remains unchanged
2) There is no source balance
3) neutral wire available does not carry any current
114. 'Creeping' in energy meters can be prevented by
1) using extra turns on the voltage coil
2) having two holes one opposite sides of the disc
3) using a stronger Brake magnate 4) by using steel laminations of high permeability
115. Which of the following is likely to have the largest resistance?
1) moving coil Galvanometer
2) voltmeter of range 10 V
3) ammeter of range 1 A
4) A copper wire of length 1 m and 3 mm diameter
116. If $2 \%$ of main current is to be passed through a moving coil Galvanometer of resistance G , the resistance of shunt required is
1) G/49
2) $G / 50$
3) 49 G
4) 50 G
117. Two transformers of identical voltage but of different capacities are operating in parallel. For satisfactory load sharing
1) impedance must be equal
2) per unit impedance must be equal
3) per unit impedance and $X / R$ ratio must be equal 4) impedance and $X / R$ ratio must be equal
118. Which of the following transformers is smallest?
1) $1 \mathrm{KVA}, 50 \mathrm{~Hz}$
2) $1 \mathrm{KVA}, 200 \mathrm{~Hz}$
3) $1 \mathrm{KVA}, 400 \mathrm{~Hz}$
4) $1 \mathrm{KVA}, 600 \mathrm{~Hz}$
119. In a $3 \phi$ transformer $\Delta$-connected, one of the phase has burnt up, then it works with
1) zero output
2) rated output
3) $60 \%$ of its rated output
4) $86.6 \%$ of its rated output
120. Under operating conditions the secondary of CT is always short circuited because
1) it protects the primary ckt
2) it is safe to human beings
3) it avoids core saturation and HV induction
4) all the above
121. Special precautions to be taken when using a booster transformer is that
1) it should never be left open-circuit
2) there should be no fusing in the HV side
3) it should never be left close circuit
4) none of the above
122. When the supply voltage of an induction motor is reduced by $10 \%$, the $\mathrm{T}_{\max }$ will be decreased by
1) $5 \%$
2) $10 \%$
3) $20 \%$
4) $40 \%$
123. Skew is used in induction motor in order to reduced torque of
1) time harmonics
2) space harmonics
3) slot harmonics
4) reverse rotating field
124. In case of a split phase motor, the phase shift between current in 2 - winding is arround
1) $30^{\circ}$
2) $70^{\circ}$
3) $90^{\circ}$
4) $120^{\circ}$
125. In an induction motor if the air gap is increased
1) speed will reduce
2) $\eta$ will improve
3) p.f will be lowered
4) break down torque will reduce
126. An I.M having $\mathrm{T}_{\mathrm{f}}=60 \mathrm{~N}-\mathrm{m}$. When delta connected develops a starting of $120 \mathrm{~N}-\mathrm{m}$. For the same supply voltage, if the motor is star connected, the starting torque developed will be
1) $40 \mathrm{~N}-\mathrm{m}$
2) $60 \mathrm{~N}-\mathrm{m}$
3) $90 \mathrm{~N}-\mathrm{m}$
4) $120 \mathrm{~N}-\mathrm{m}$
127. The torque speed characteristic of a Repulsion motor same as the following DC motor characteristic
1) separately excited
2) shunt
3) series
4) compound
128. A $3 \phi$ slip-ring I.M is fed from the rotor side with stator winding short circuited. The frequency of the current flowing in the short ckt stator is
1) slip frequency 2 ) supply frequency 3 ) frequency corresponding to rotor speed 4) 0
129. A 90 slot stator has a $3 \Phi, 6$ pole short coiled winding. Each coil of which span from slot 1 to slot 14 , then the pitch factor is
1) 0.9
2) 0.978
3) 0.982
4) 0.992
130. A 10 pole 25 Hz alternator is directly coupled to and is driven by a 60 Hz synchronous motor. The no. of poles of a syn. Motor are
1) 48 poles
2) 12 poles
3) 24 poles
4) all of the above
131. The power input to the DC field at a 15 KVA (input) of syn. motor is $6 \%$ of the rate ac input. Then the DC that excites the field at 120 V is
1) 7.5 A
2) 125 A
3) 15 A
4) none
132. Which of the following $1 \phi$ motor has highest starting torque?
1) split phase motor
2) shaded pole motor
3) capacitor start motor4) repulsion motor
133. To eliminate the $5^{\text {th }}$ harmonic of a short pitched coil should have a short pitching angle of
1) $36^{\circ}$
2) $18^{0}$
3) $15^{\circ}$
4) $12^{0}$
134. A DC machine is provided with both inter pole winding (IPW) and compensating winding (CPM). With respect to armature
1) both IPW and CPW are in parallel
2) both IPW and CPW in series
3) IPW is in series CPW is in parallel
4) IPW is in parallel and IPW is in series
135. The function of equalizing ring in lap wound DC generator is
1) to avoid SC current 2) to neutralise the armature reaction
2) to help get sparkless commutation 4) all the above
136. In a level compound generator, the series filed A-T are
1) in direct opposition to the shunt field A-T
2) in the same direction as the shunt field A-T
3) at $90^{\circ}$ to the shunt filed A-T
4) placed on inter pole
137. In series parallel control of dc series motor the total field turns are N , then
1) AT parallel $=2 \mathrm{AT}$ series
2) AT parallel = AT series
3) AT parallel=1/2 AT series
4) AT parallel=1/4 AT series
138. Field control of a DC shunt motor gives
1) constant torque drive
2) constant kw drive
3) constant speed drive
4) unvariable speed driver
139. An external load resistance added in the field of a dc shunt generator will
1) increase the speed of the generator
2) increase the voltage of the generator
3) decrease the voltage of the generator
4) increase the power delivered
140. Which of the motor is used for rolling mills?
1) DC shunt motor
2) DC commutatively compound motor
3) DC series motor
4) DC differentialy compound motor
141. What will happen if the supply terminals of DC shunt motor are inter changed
1) motor will stop
2) motor will run at its normal speeds in the same direction as it was running
3) the direction of rotation will reverse
4) motor will run at speeds lower than the normal speeds in the same direction
142. Which of the following test can be conducted on other than shunt machines
1) swinburne test
2) retardation test
3) field's test
4) blocked rotor test
143. The magnetizing current in a transformer is rich in
1) $3^{\text {rd }}$ harmonic
2) $5^{\text {th }}$ harmonic
3) $7^{\text {th }}$ harmonic
4) $8^{\text {th }}$ harmonic
144. In a $3 \phi$ inductor motor, the electrical representation of the variable mechanical load is the resistance of
1) $R_{2}=(S-1)$
2) $R_{2}(1 / S-1)$
3) $R_{2}\left(1-\frac{1}{S}\right)$
4) $R_{2}=(1-S)$
145. When a synchronous motor is running at ' N ' the damper winding produces
1) damping torque
2) eddy current torque
3) torque aiding the developed torque
4) no torque
146. For a fault at the terminals of a syn. Generator, the fault is maximum for a
1) $3 \phi$ fault
2) $3 \phi$ to ground fault
3) line to ground fault 4) line to line fault
147. If the fault current is 2000 A , the relay setting is $50 \%$ and CT ratio is $400 / 5$, the PSM is
1) 25 A
2) 15 A
3) 50 A
4) 10 A
148. Resistance switching is normally employed in
1) all CB
2) BOCB
3) MOCB
4) AB CB
149. The insulation resistance of a cable of length 10 km is $1 \mathrm{M} \Omega$. For a length of 100 km of the same cable the insulation resistance will be
1) $1 \mathrm{M} \Omega$
2) $10 \mathrm{M} \Omega$
3) $0.1 \mathrm{M} \Omega$
4) $0.01 \mathrm{M} \Omega$
150. The surge impedance of a 400 km long, OH line is $400 \Omega$. For 200 km length of the same line, the surge impedance well be
1) $200 \Omega$
2) $800 \Omega$
3) $400 \Omega$
4) $100 \Omega$
151. In order to have a lower cost of electrical energy generations, the load factor
1) and diversity factor should below
2) should be low but diversity factor should be
3) should be high but diversity factor should high 4) and diversity factor should be high
152. Incase of a $3 \phi$ SC in a system, the power fed into the system is
1) mostly reactive
2) mostly active
3) both 1 and 2
4) only reactive
153. A $3 \phi$ CB is rated a $2000 \mathrm{MVA}, 33 \mathrm{KV}$, its making current will be
1) 35 kA
2) 49 kA
3) $8 \backslash 70 \mathrm{kA}$
4) 89 kA
154. The main consideration for higher and higher operating voltage of transmission is to
1) increase the of $\eta_{T}$
2) reduce power losses
3) increase power transmission capability
4) both 1 and 2
155. A thyrite type lightning arrestor
1) blocks the surge voltage appearing in a line 2) absorbs the surge voltage appearing in a line
2) offer a low resistance path to the surge appearing in the line
3) return the surge back to the source
156. The scharge motor operating at
1) leading p.f.
2) lagging p.f
3) Unity p.f
4) all the above
157. When a dc source is switched to purely inductive, the current response is
1) an exponentially rising curve
2) an exponentially decaying curve
3) a straight line passing through the origin
4) a straight line off set from the origin
158. Which plant can be never have $100 \%$ load factor
1) nuclear power plant 2) peak load plant
2) hydro electric power plant
3) base load plant
159. More heat loss in a steam power station occurs in
1) boiler
2) super heater
3) economiser
4) condenser
160. The spacing between the conductors is increased the capacitance, inductance, resistance of a transmission line will be
1) increase, increase, increases
2) decreases, increases, increases
3) decreases, increases, constant
4) increases, decreases, constant
161. Corona loss is less when the shape of conductor
1) circular
2) flat
3) oval
4) independent of shape
162. Skin effect is effected by the following factor
1) supply frequency
2) radius of the conductor
3) type of supply system
4) all the above
163. The high voltage cartridge fuses are used up to
1) 11 KV
2) 22 KV
3) 33 KV
4) 66 KV
164. For high voltage applications, the insulator used of $\qquad$ type
1) suspension
2) pin
3) strain
4) none
165. The critical disruptive voltage will $\qquad$ if pressure decrease and $\qquad$ of temp increases
1) decreases, decreases
2) decreases, increases
3) increases, decreases
4) increases, increases
166. $\qquad$ relay is used for the feeders
1) mho
2) translay
3) merz price
4) bucholz
167. If the spark over voltage for an insulator string of 4 disc is 36 KV , the string efficiency is $90 \%$, the spark over voltage of each disc is
1) 9 KV
2) 10 KV
3) 3.24 KV
4) 11 KV
168. Annealing of metals is preformed by
1) resistance heating
2) eddy current heating
3) arc furnace
4) dielectric heating
169. The ratio of MSCP to MHSCP of source of light is called
1) reflection factor
2) candela factor
3) reduction factor
4) quality factor
170. The minimum permissible value of earth resistance at small substation is
1) $8 \Omega$
2) $5 \Omega$
3) $0.5 \Omega$
4) $2 \Omega$
171. The type of cable joint for large size cable
1) Tee joint
2) married joint
3) Ferrul joint
4) Britannia joint
172. During carbon arc welding of electrode is connected to positive, then
1) arc will be dull
2) arc will not strike
3) metal will not melt
4) carbon will have tendency to go into the weld joint
173. During the re generative breaking energy is
1) disippated in resistor
2) returned to the supply lines
3) stored in the form KE
4) all the above
174. Unit of specific energy consumption is
1) watt Hr/tonne/mile 2) KW/Hr/km
2) Watt/Hr/tonne/km 4) $\mathrm{Kwh} /$ tonne/km
175. A train has a schedule speed of $36 \mathrm{~km} / \mathrm{H}$ on a level track. If the distance between the station is 2 km and stopping time 30 sec . The actual time will be
1) 200 sec
2) 230 sec
3) 170 sec
4) 16.6 sec
176. The function of bleeder resistance in filter circuit is
1) to maintain minimum current necessary for optimum inductor filter operation
2) to work as voltage divider in order to provide variable output from the supply
3) to provide discharge path to capacitors so that output becomes zero when the circuit has been de-energized 4) all the above
177. In a rectifier ckt, the load connected is of low value. For proper filter operation, it is required that
1) a capacitor is to be included in the ckt $\quad$ 2) a bleeder resistance is to be placed in the ckt
2) an inductor filter is to be included in the ckt 4) all the above
178. A commercial and an ideal regulated power supply should have
1) $100 \%, 50 \%$ regulation
2) $1 \%, 0 \%$ regulation
3) $100 \%, 0 \%$ regulation
4) $100 \%, 100 \%$ regulation
179. Voltage dependent resistors are used
1) as current stabilizers
2) as heating elements
3) for inductive circuits
4) to suppress surges
180. Diac-Traic built in the same chip is called
1) ignition
2) thysistor
3) quadrac
4) all the above
181. For a PN-diode, the life time $\tau$ of carries is proportional to
1) Wd
2) $\mathrm{Wd}^{2}$
3) $\sqrt{ } \mathrm{Wd}$
4) $1 / \mathrm{Wd}$
182. In electronic timers, the basic timing elements are generally
1) $R$ and $C$ in series
2) $R$ and $C$ in parallel
3) $R$ and $L$ in series
4) $R$ and $L$ in parallel
183. In radio and TV communication principle, the sound signals are $\qquad$ type modulated
1) amplitude
2) frequency
3) phase
4) all the above
184. Which of the following multivibrator is called free running multivibrator
1) monostable
2) bistable
3) astable
4) none
185. Which of the following counters has the highest speed
1) asynchronous counter
2) synchronous counter
3) Ripple counter
4) ring counter
186. Which of the following flip flop is free from race around problems
1) RS flip flop
2) D flip flop
3) T-flip flop
4) master slave JK flip flop
187. The circuit used for parallel to serial conversion of data
1) decoder
2) demultiplexer
3) multivibrator
4) multiplexer
188. Which of the following is not sequential circuit
1) counter
2) flip flop
3) shift register
4) multiplexer
189. The no. of compassion carried out in a 4 bit flash type A/D counter is
1) 16
2) 15
3) 8
4) 10
190. A properly biased JFET will act as a
1) current controlled current source
2) voltage controlled voltage source
3) voltage controlled current source
4) current controlled voltage source
191. In a common emitter amplifier, the unbypassed $R_{E}$ provides
1) voltage shunt feedback
2) current series feedback
3) negative voltage feedback
4) positive current feedback
192. As compared to MOS memories, Bi polar memories have
1) smaller access time and lower cost
2) small access time and higher cost
3) greater access time and low cost
4) greater access time and higher cost
193. For the logic circuit shown in the figure, the output Y is given by
1) A. B
2) $A B+A B$
3) $A B+A B$
4) $A B+A+B$
194. The decimal equivalent of hexa decimal number E5 is
1) 279
2) 229
3) 427
4) 3000
195. Which use least power consumption of logic family?
1) TTL
2) ECL
3) CMOS
4) all use same power
196. In $8086 \mu \mathrm{p}$, the no flag register are
1) 5
2) 6
3) 8
4) 9
197. PUSH and POP instructions need $\qquad$ machine cycles for its operation in $\mu \mathrm{p}$ programming language
1) 2
2) 3
3) 4
4) 5
198. Pick out the following which is a 16 -bit register in $\mu \mathrm{p} 8085$
1) program counter
2) stack pointer
3) HL pair
4) all the above
199. The simplification of Boolean expression $\overline{\mathrm{XZ}}+\mathrm{X} \overline{\mathrm{Z}}+\mathrm{YZ}$
1) Y. $\bar{Z}$
2) $Y+\bar{Z}$
3) XYZ
4) $\bar{X} \cdot(Y+Z)$
200. The non-maskable interrupt is
1) RST $7.5 \quad 2$ INTR
2) RST 5.5
3) TRAP
