

QUESTION BANK FOR 3PHASE LOCOMOTIVES

1. Setting of Over-current relay in WAG9 loco is
 - a) 2.6 A
 - b) 3.0 A
 - c) 3.3A
 - d) 3.6 A
2. The wheel diameter of new wheel in WAG-9 locomotive is
 - a) 1016 mm
 - b)1092mm
 - c)1096 mm
 - d)1100 mm
3. The wheel diameter of condemning wheel in WAG-9 locomotive is
 - a) 1012 mm
 - b)1016 mm
 - c) 1020 mm
 - d) 1024 mm
4. Permissible root wear in a WAG-9 locomotive is
 - a) 5.5 mm
 - b) 6.0 mm
 - c) 6.5 mm
 - d) 4.5 mm
5. Permissible flange wear is
 - a) 2 mm
 - b) 4 mm
 - c) 5 mm
 - d) 3 mm
6. Type of motor used in WAG9 locos for traction purpose is
 - a) DC series motor
 - b) DC shunt motor
 - c) Three phase synchronous motor
 - d)Three phase asynchronous motor
7. Rating of each cell of a battery in a WAG-9 locomotive is
 - a) 1.2 V
 - b)1.4 V
 - c) 1.34V
 - d) None of them
8. Total battery voltage in a WAG-9 locomotive is
 - a) 100V
 - b) 110 V
 - c)120 V
 - d) 130 V
9. AH rating of batteries in WAG-9 locomotive is
 - a) 169 AH
 - b) 179 AH
 - c) 189 AH
 - d) 199AH

c)Mechanically

d) None of them

29. Air dryer purging time is

a) 1 min

b) 30 sec

c) 90 sec

d) 2 min

30. Type of battery used in WAG-9 locomotive is

a) Nickel Cadmium

b) Lead Acid

c)NimH

d) Dry Cell

31. Rating of capacitors used in DC link of Auxiliary Converter in a WAG-9 GTO is

a) 3 mF

b)18 mF

c) 12 mF

d)9 mF

32. How many unloader valves are there in a WAG-9 locomotive?

a) 2

b) 3

c) 4

d) 5

33. What is the weight of WAG-9H locomotive?

a) 123 Ton

b) 129 Ton

c) 130 Ton

d) 135 Ton

34. What is the maximum frequency for TM of WAG-9 Locomotive?

a) 50 Hz

b) 160 Hz

c) 132 Hz

d) 123 Hz

35. How many teathed Pinion is used in WAP7 and WAG9 locomotives respectively?

a) 20, 21

b) 21, 22

c) 21, 20

d) 22, 21

36. What is Base Tangent Length range for 21 teeth pinion?

a) 72.11-72.58 mm

b) 75.11-75.58 mm

c) 77.11-77.58 mm

d) 79.11-79.58 mm

37. MCB 100 in 3 phase locomotive is related to

a) OCB

b) MCP

- c) MRB
d) Battery Charger
38. Start capacitance of Machine Room Blower in WAP-7 locomotive is
- a) 22 μ F
b) 47 μ F
c) 69 μ F
d) None of them
39. Total number of 3 phase Auxiliary motors in a 3 phase locomotives are-
- a) 14
b) 12
c) 13
d) None of them
40. Total number of dampers in a WAG-9 locomotive are
- a) 20
b) 16
c) 12
d) None of them
41. How many panels are there on the driver's desk?
- a) 2
b) 3
c) 4
d) 5
42. What lowest OHE voltage for operation of a WAG-9 GTO locomotive?
- a) 15.5 kV
b) 16.5 kV
c) 17.5 kV
d) None of them
43. What is the rating of Auxiliary Converter in WAG-9 IGBT locomotive?
- a) 130 kVA
b) 110 kVA
c) 100 kVA
d) 120 kVA
44. Emergency braking in a 3-phase locomotive can be initiated by
- a) VCD
b) MEMOTEL
c) Brake Electronics
d) All of the above
45. VCD is acknowledged by
- a) Application of A9
b) Sanding operation
c) Movement of throttle
d) All of the above
46. Which operation of a 3-phase locomotive is dependent on the control electronics?
- a) Application of Parking Brake
b) Application of Pneumatic Brake
c) Sanding Operation
d) None of the above

84. Continuous glowing of LSF indicates
- a) Priority 1 fault
 - b) One of the sub systems is isolated
 - c) Priority 2 fault
 - d) Priority 1 or Priority 2 fault
85. During self hold mode, central electronics in WAG-9H loco will remain in ON for
- a) 5 min
 - b) 10 min
 - c) 15 min
 - d) 20 min
86. To move 3-phase loco as live or dead ensure following brake(s) is/are released.
- a) Parking brakes
 - b) Direct brakes
 - c) Parking and Direct brakes
 - d) None of them
87. When parking brakes are applied, parking brake pressure gauge reads
- a) 0Kg/cm²
 - b) 4Kg/cm²
 - c) 3.5Kg/cm²
 - d) None of them
88. When knorr brake pneumatic panel loco is attached in banker, keep mode switch in
- a) HLPR position
 - b) Lead position
 - c) Trail position
 - d) Test position
89. Location of Emergency stop push button in three phase loco is
- a) Panel A
 - b) Panel B
 - c) Panel C
 - d) Panel D
90. How many number of direct brake cylinders and parking brake cylinder is WAP-7 loco provided with?
- a) 8 & 4
 - b) 12 & 6
 - c) 4 & 8
 - d) None of them
91. Horse Power of WAG-9H loco is
- a) 5440HP
 - b) 5000HP
 - c) 6120HP
 - d) 8000HP
92. While working with Multiple Unit of 3-phase locomotive, slave loco VCB will close with delay of
- a) 60 Seconds
 - b) 0.5 Seconds
 - c) Almost instantaneously
 - d) None of the above

provided BL key is in

- a) C position
- b) D position
- c) C or D position
- d) None of them

103. Before operating throttle, ensure the following node information onscreen

- a) FLG504
- b) FLG550
- c) FLG570
- d) FLG590

104. When panto is raised and DJ is not closed in WAG-9 locomotive CE will switch OFF after

- a) 10Minutes
- b) 15Minutes
- c) Immediately
- d) CE will not switch off

105. How many number of helical springs does a WAG-9 loco have in primary suspension?

- a) 4
- b) 8
- c) 16
- d) None of them

106. Oil cooling blower cools

- a) TFP Oil
- b) SR Oil
- c) TFP Oil & SR Oil
- d) Traction Motors

107. P2 message appears if battery voltage drops below volts,

- a) 92Volts for 30 seconds
- b) 82Volts for 30 seconds
- c) 90Volts for 20 seconds
- d) 85Volts for 20 seconds

108. For application of parking brakes speed of locomotive should be

- a) Below 5Kmph
- b) Above 5 Kmph
- c) Below 1.5Kmph
- d) Zero Kmph

109. With application of direct brakes Traction is not possible beyond

- a) 5Kmph
- b) 10Kmph
- c) 15Kmph
- d) 0Kmph

110. Normal position of panto selector switch is

- a) Norm
- b) I
- c) II
- d) Auto

129. In a 3-phase locomotive VCD is required to acknowledge after attaining of following trainspeed.

- a) 1.5kmph
- b) 2kmph
- c) 5 kmph
- d) 15kmph

130. Constant Speed Control can be activated after attaining the speed of

- a) 1 kmph
- b) 1.5 kmph
- c) 5 kmph
- d) 15 kmph

131. What is the function of MUB resistance in WAG-9 Locomotive?

- a) To control speed of locomotive
- b) To protect DC link against Overvoltage
- c) To control Torque of locomotive
- d) None of them

132. What is the value of MUB resistance in WAG-9 GTO Locomotive?

- a) 1.5 ohms
- b) 2.0 ohms
- c) 2.5 ohms
- d) 3.0 ohms

133. Over voltage of DC link in Traction converter in a 3 phase Locomotive happens due to

- a) Wheel spin
- b) Panto bouncing
- c) Defective series resonant circuit
- d) All of the above.

134. Frequency of Auxiliary converter-1 in a 3 phase IGBT locos is

- a) 37 Hz
- b) 44 Hz
- c) 47 Hz
- d) 50 Hz.

135. In a 3 phase loco fault message comes when battery charger current is

- a) Below 12.5 A
- b) Below 10 A
- c) Above 12.5 A
- d) Above 10 A

136. Tractive effort is required to

- a) Overcome the gravity of train mass
- b) Overcome friction, windage & curve resistance
- c) Accelerate the train
- d) All of the above.

137. Following is the advantage of regenerative braking

- a) It avoids wear of wheel
- b) It is faster

c) More heat regenerated during braking d) All of the above.

138. Which type of braking is not available in 3 phase Locomotives?

- a) Regenerative brake
- b) Loco brake
- c) Parking brake
- d) Rheostatic brake

139. Following is the advantage of 3-phase induction motor over DC series motor.

- a) More robust
- b) high power to weight ratio
- c) Regenerative braking is possible
- d) All of the above.

140. RGCP range for working of main compressor in a 3-phase Locomotive.

- a) 8 – 10 Kg/cm²
- b) 8.5 – 10 Kg/cm²
- c) 8.5 – 11 Kg/cm²
- d) 8 – 11 Kg/cm²

141. Emergency brake can be initiated by

- a) VCD
- b) MEMOTEL
- c) Train parting
- d) All of the above.

142. The action of Constant speed control in a 3-ph locomotive is not cancelled by

- a) Movement of TE/BE throttle
- b) initiation of sanding
- c) Drop in BP pressure below 4.75 Kg/cm²
- d) Brake cylinder pressure above 0.6 Kg/cm²

143. Wheel flange lubrication is controlled by

- a) Brake system
- b) MEMOTEL
- c) Control electronics
- d) Sanding

144. Power factor of a 3 phase Locomotive is

- a) 0.8 lag
- b) 0.8 lead
- c) Almost unity
- d) More than 1

145. 'Low pressure main reservoir' message comes in a 3 phase Locomotive when main reservoir pressure is below

- a) 8.5 Kg/cm²
- b) 8.0 Kg/cm²
- c) 6.4 Kg/cm²
- d) 5.6 Kg/cm²

146. When the unloader valve of main compressor in a 3 phase loco doesn't work then

- a) Its safety valve blows
- b) Its motor takes high starting current
- c) Motor starts in opposite direction
- d) All of the above

147. If due to a fault the battery charger stops working in a WAG-9 locomotive, a full charge

Battery is able to supply power to control circuit for approx

- a) 3 Hrs
- b) 4 Hrs
- c) 5 Hrs
- d) 6 Hrs

148. Which of the followings is a third party control electric in WAG-9 locomotive?

- a) Brake control
- b) Automatic vigilance
- c) Fire detection
- d) All of the above

149. Traction interlock in a WAG-9 locomotive is not initiated by

- a) Emergency brake by VCD
- b) Battery voltage too low
- c) MEMOTEL 5% over maximum speed
- d) Pressure switch emergency brake open

150. WAG-9 Loco will shut down if battery voltage is below

- a) 92 V
- b) 86 V
- c) 82 V
- d) None of the above

151. SS 06 belongs to following subsystem.

- a) Auxiliary converter No.1
- b) Auxiliary converter No.2
- c) Auxiliary converter No.3
- d) Traction converter No.1

152. In WAG 9/WAP 7 loco, location of air dryer is

- a) Behind MCP 1 in left side
- b) Between two trucks
- c) Behind cattle guard 1 in left side near wheel no 1
- d) Behind cattle guard 1 in right side near wheel no 2

153. SS 05 belongs to the following sub system.

- a) Harmonic filter
- b) Hotel load
- c) Battery
- d) Batteries

154. Location of Emergency stop push button in three phase loco is

- a) Panel A
- b) Panel B
- c) Panel C
- d) Panel D

155. Specialty of knorr brake pneumatic panel loco is

- a) There are no BE in loco
- b) Though BE failed can work the train

- c) BE will not fail
d) None of the above
156. Loco grounding switch is
a) Blue KABA key (IG 38)
b) BL key
c) HOM
d) HPT
157. Location of MCP 1 is
a) In machine room No. 1
b) In machine room No. 2
c) Below machine room No. 2
d) Below machine room No. 1
158. While working with MU in 3-phase loco, if uncoupling takes place between the locos, the position of slave loco is
a) Systematic shut down
b) Only VCB trips
c) VCB trips and panto lowers
d) No specific action
159. Location of CHBA is
a) Machine Room
b) BUR-1
c) BUR-2
d) BUR-3
160. Procedure of resetting VCD in WAG-9 /WAP7 loco is.
a) Keep throttle in 'O'
b) Wait for 160 seconds.
c) Press BPVR
d) all the above
161. Constant speed control can be activated after attaining of
a) 5 kmph speed
b) 1 kmph speed
c) 1.5 kmph speed
d) 15 kmph speed
162. SS 18 belongs to the following sub system.
a) Fire
b) Memotal
c) Processor FLG1
d) Processor FLG2
163. In dead loco, open the following COC for the purpose of charging auxiliary reservoir.
a) 70 COC
b) 47 COC
c) 74 COC
d) 136COC
164. While moving three Phase loco as dead to avoid wheel skidding
a) Stop the train, trip VCB
b) Lock 23 plunger in applied condition
c) Ensure loco brakes are release
d) All the above
165. SS 17 belongs to the following sub system.
a) Fire detection
b) MEMOTEL
c) Processor FLG1
d) Processor FLG2
166. VCD is required to acknowledge after attaining of following train speed.
a) 5 kmph
b) 1 kmph
c) 1.5 kmph
d) 15 kmph
167. SS19 belongs to the following Sub system.
a) Fire detection
b) Train bus

c) Processor FLG1

d) Processor FLG2

168. Constant speed control can be activated after attaining of following train speed

a) 5 kmph

b) 1 kmph

c) 1.5 kmph

d) 15 kmph

169. What is the periodicity of AOH of WAP-7 locomotive?

a) 1.0 year

b) 1.5 years

c) 2.0 years

d) 2.5 years

170. What is the periodicity of IOH of WAG-9/WAP-7 locomotive?

a) 4 years

b) 5 years

c) 6 years

d) 8 years

171. What is the periodicity of POH of WAG-9/WAP-7 locomotive?

a) 8 years

b) 10 years

c) 12 years

d) 14 years

172. Which of the following schedule of loco not done in Electric Loco Shed?

a) IT

b) AOH

c) IOH

d) POH

173. Which of the following function takes place in simulation mode of a 3-Ph locomotive?

a) Pantograph rises

b) MEMOTEL is active

c) Battery is charged

d) Parking brake is applied.

174. During normal working of a 3-phase locomotive OCB 1 & 2 are supplied power by

a) Auxiliary Converter-I b) Auxiliary Converter-II

c) Auxiliary Converter-III

d) None of them

175. When DJ is closed in a 3-phase locomotive, which auxiliary motors run in normal condition?

a) TMS 1 & 2

b) MRB 1 & 2

c) MRS 1 & 2

d) All of them

176. What is the setting of safety valves used in FTIL (D&M) make Compressor of a 3 phase locomotive?

a) 2.6 kg/cm², 11.5 kg/cm² b) 3.6 kg/cm², 11.0 kg/cm²

c) 2.6 kg/cm², 12.5 kg/cm²

d) 3.6 kg/cm², 12.5 kg/cm²

177. How many oil pumps are used in a 3 phase locomotive?

a) 2 b) 4

c) 3 d) 5

178. Which auxiliary motor works in a 3 phase locomotive when BL key is made on?

a) Main compressor

b) Oil Cooling Blower

c) Machine Room Blower

d) Auxiliary Compressor

179. What is the weight of a WAP-7 locomotive?

a) 123 Ton

b) 86 Ton

c) 92 Ton

d) 98 Ton

180. Axle load in a WAP-7 loco is

a) 20.5 Ton

b) 19.5 Ton

c) 18.5 Ton

d) 21.0 Ton

181. In a 3-phase locomotive isolation of individual Traction Motor is possible in

a) GTO locomotive

b) IGBT locomotive

c) Both

d) None

182. In a 3-phase locomotive foot switch is not available for

a) Sanding

b) Parking Brake

c) PVEF

d) Vigilance

183. The permissible dia difference between wheels on the same axle in a WAG-9 locomotive is

a) 1 mm

b) 2 mm

c) 4 mm

d) 8 mm

184. The permissible dia difference between wheels on the same bogie but different axles in a WAG-9 locomotive is

a) 4 mm

b) 6 mm

c) 8 mm

d) 10 mm

185. The permissible dia difference between wheels on the different bogies in a WAG-9 locomotive is

a) 24 mm

b) 20 mm

c) 28 mm

d) 26 mm

186. The number of roof line insulators in a WAG-9 locomotive are-

a) 9 b) 6

c) 7

d) 8

187. The number of Panto base insulators in a WAG-9 locomotive are-

a) 4 b) 6

c) 8

d) 10

188. How many Central Electronics are there in a 3-phase locomotive?

a) 1 b) 2

c) 3

d) 4

189. In a 3-phase locomotive which auxiliary motor works on DC voltage?

a) Main compressor

b) Oil Cooling Blower

c) Machine Room Blower

d) Auxiliary Compressor

190. What is the value of Resistor Harmonic filter in WAG-9 locomotive?

a) 0.1 ohm

b) 0.15 ohm

c) 0.2 ohm

d) 0.25 ohm

191. What is the value of Capacitor Harmonic filter in WAG-9 locomotive?
- a) 0.8 mF
 - b) 0.6 mF
 - c) 1.0 mF
 - d) 0.4 mF
192. What is the input voltage of Auxiliary Converter in a WAG-9 locomotive at 25kV OHE voltage?
- a) 2180 V
 - b) 1269 V
 - c) 1449V
 - d) 1000 V
193. The slip value of an induction motor during regeneration mode is
- a) Almost unity
 - b) More than unity
 - c) Negative
 - d) None of them
194. The output frequency of Gate Unit Power Supply in a WAG-9 GTO locomotive is
- a) 16 kHz
 - b) 5 kHz
 - c) 10 kHz
 - d)20 kHz
195. How many Gate Units are there in a Traction Converter in WAG-9 GTO locomotive?
- a) 8
 - b) 12
 - c) 15
 - d) 18
196. The bogie used for WAG-9 locomotive is
- a) Fabricated
 - b) Casted
 - c) Both of them
 - d) None of them
197. In three phase locomotives single phase MCB is used for which auxiliary motor?
- a) Oil Cooling Blower
 - b) Traction Motor Blower
 - c) Machine Room Blower
 - d) None of them
198. Loco Brake is automatically inhibited in a 3 phase locomotive when Regenerative braking effort exceeds
- a) 5 kN
 - b) 10 kN
 - c) 15 kN
 - d) 20 kN
199. Output voltage of Gate Unit Power Supply (GUSP) in a 3-phase GTO locomotive is
- a) 16 V ac
 - b) 48 V ac
 - c) 16 V dc
 - d) 48 V dc
200. What is the normal current of a battery charger in a three phase locomotive?
- a) 10 A
 - b) 20A
 - c) 15 A
 - d) 12.5 A