Technical Interview: Electronics and Communication Engineering

Electronics and Communication Engineering

Digital Electronics

102) What are basic properties of Boolean algebra?

103) Mention the limitations of Karnaugh map.

104) What is an Essential Prime Implicant?

105) Describe the characteristics of digital ICs.

106) Define Figure of Merit.

107) State advantages and disadvantages of TTL.

108) What is priority Encoder?

109) What is code conversion?

110) Give the applications of Demultiplexer.

111) List out the applications of comparators?

112) What is the difference between Ripple Carry Adder and Carry Look-ahead Adder?

113) Differentiate between Latch and flip-flop?

114) What is the operation of T – flip-flop?

115) Define race around condition.

116) What is edge-triggered flip-flop?

117) Define hold time of a flip-flop.

118) What are the two types of shift register counters?

119) What is the use of state diagram?

120) What is mask – programmable ROM?

121) How many words can a 16×8 memory can store?

122) What is the technique adopted by DRAMs?

123) Define hazards. What is static 1 hazard?

124) How can the hazards in combinational circuit be removed?

125) How does an essential hazard occur?

126) What are the types of asynchronous circuits?

127) What are races? Define critical race?

128) Specify the four control signals commonly used by the 8085 MPU.

129) What is the difference between INR & INX instructions?

130) Why the clock frequency is 5 MHz, how much time is required to execute an instruction of 18 T-states?

131) Why the lower order address bus is multiplexed with data bus? How they will be de-multiplexed?

132) Differentiate between maskable and non-maskable interrupts.

133) Specify the contents of the registers and the flag status as the following instructions are executed.

MVI A, 01H

MOV B, FFH

MOV C, A

ADD B

HLT

134) What is Cycle Stealing in direct memory data transfer?

135) Explain the function of READY pin of 8085 MPU?

136) What is the need of a register file in CPU?

137) Distinguish between 8085 and 8086 microprocessors.

138) What is R-2r ladder DAC?

139) Define accuracy of DAC.

140) Define: resolution, conversion time and range of ADC.

Digital Signal Processing

141) What is mean by Digital signal processing?

142) What are the advantages of processing a signal digitally compared to its analog form?

143) What are the limitations of digital signal processing?

144) What are the factors that must be considered for processing a signal using digital system?

Processors

145) How Digital signal processors are different from other microprocessors?

146) What is the difference between fixed point and floating-point Digital signal processors?

147) What is mean by Harvard architecture?

148) What is mean by Very Long Instruction Word architecture?

149) Define zero overhead looping in DSP processor?

150) Define modified Harvard architecture?

151) How many stage pipelining is used in TMS 320*C*54× processor?

152) How does parallel processing is done in Digital signal processor?

Filters

153) Classify digital filters?

154) Differentiate analog and digital filters?

155) name the methods used for the design of IIR filters?

156) Name the methods used for the design of FIR filter?

157) Where does poles lie for butter-worth filter?

158) Where does poles lie for Chebyshev filters?

159) What is the difference between type-I and type-II chebyshev filters?

160) Mention the properties of finite Impulse Response filters?

161) Mention the properties of infinite Impulse Response filters?

Electro-Magnetic Theory

162) What is an electromagnetic wave?

163) State the applications of electromagnetism.

164) What is Gauss theorem?

165) What is stokes theorem?

166) State and explain Amperer's law.

167) Explain Poynting vector and power flow in electromagnetic fields.

168) Explain the reflection of plane waves by a perfect dielectric.

169) What are the types of transmission lines?

170) What are the factors that limit the maximum power transfer capability in a transmission line?

171) Explain some of the methods to improve the strength of transmission system.

172) What is a Short Dipole?

173) What is self-impedance and mutual impedance?

174) Which is Antenna Aperture & What are its types?

175) What antenna will produce circularly polarized waves?

176) What is the radiation resistance of a half wave dipole?

177) What is meant by antenna beam width?

178) What is meant by front to back ratio?

179) Give the minimum and maximum value of SWR and reflection coefficient.

180) How is the TE_{10} mode launched or initiated in rectangular wave guide using an open-ended coaxial cable?

181) Define characteristic impedance and propagation constant of transmission line.

182) What is the physical significance of an infinite line?

183) What are the applications of Smith chart

What is the dominant mode for the TE and TM waves in the rectangular waveguide?

184) Distinguish between wave guide and cavity resonator.

185) What is the value of Z_0 for the dissipation-less line?

186) State the condition for distortion-less line.

187) Define skin depth.

188) What is mean by group and phase velocities?

189) What is point source?

190) How does data flow in optical fiber?

191) What is mean by dispersion in optical communication?

192) What is the significance of S parameters?

193) What is mean by processing gain of an antenna?

194) Explain critical angle in optical fiber communication.

195) What is the difference between lumped elements and distributed elements?

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