ELECTRONICS

Each question has four possible answers, tick (✓) the correct answer:

1. Temperature coefficient of resistivity of a semi conductor is:

(a) Constant **(b)** Positive

(c) Negative **(d)** Variable

2. The pn junction on forward baising acts as:

(a) Capacitor **(b)** Low resistor

(c) Inductor **(d)** High resistor

3. Which one of the following is not semi conductor:

(a) Silicon **(b)** Copper

(c) Gallium arsenide **(d)** Germinium

4. The average gap for Germanium at 0K is:

(a) 1.12 ev **(b)** 0.02 ev

(c) 6.72 ev **(d)** 7.2 ev

5. The process of doping causes the resistivity of semi conductor to:

(a) Decrease **(b)** Remains constant

(c) Increase **(d)** None of these

6. Depletion region has:

(a) Electrons only **(b)** Holes only

(c) Both electrons and holes **(d)** Neither holes nor electrons

7. An n-type substance is:

(a) Electrically neutral **(b)** Negatively charged

(c) Positively charged **(d)** None of these

8. Holes are exist in:

(a) Conductors **(b)** Semi conductors

(c) Insulators **(d)** All of the above

9. A pn junction cannot be used as:

(a) A detector **(b)** A rectifier

(c) An amplifier **(d)** None of these

10. Hole is equivalent to:

(a) A positive charge **(b)** A negative charge

(c) A neutral **(d)** None of these

11. There is no current due to holes in good electrical conductors because they have:

(a) Large forbidden energy gap **(b)** No valance electron

(c) Overlapping valance & conduction band **(d)** None of these

12. Silicon is the most commonly used:

(a) Insulator **(b)** Semi-conductor

(c) Dielectric **(d)** Conductor

13. The crystal of Germinium or silicon in its pure form at absolute zero acts as:

(a) Insulater **(b)** Conductor

(c) Semi-conductor **(d)** None of these

14. The crystal of germinium or silicon in its pure form at room temperature acts as:

(a) Insulator **(b)** Conductor

(c) Semi-conductor **(d)** None of these

15. All the valence electrons present in a crystal of silicon are bounded in their orbits by:

(a) Covalent bond **(b)** Ionic bond

(c) Molecular bond **(d)** None of these

16. Majority charge carries in the P-type region of p-n-junction are:

(a) Protons **(b)** Electrons

(c) Positrons **(d)** Holes

17. The impurity in the germinium is usually in the ratio of:

(a) $1:10^6$ **(b)** $1:10^4$

(c) $1:10^8$ **(d)** $1:10^{10}$

18. A potential barrier of 0.7V exists across p-n junction made from:

(a) Silicon **(b)** Germinium

(c) Indium **(d)** Gallium

19. A Potential difference is developed across the depletion region of p-n junction due to:

(a) Negative ions **(b)** Positive ions

(c) Both positive and negative ions **(d)** None of these

20. The external potential difference applied to p-n junction for forward biasing supplied energy to:

(a) Free electrons in n region **(b)** Holes in p-region

(c) Both free electrons and holes **(d)** None of these

21. In forward biased situation, as the biasing voltage is increased, the current:

(a) Does not change **(b)** Decreases

(c) Also increases **(d)** None of these

22. While drawing a graph between current and biasing voltage in p-n junction, the current is taken:

(a) Along x-axis **(b)** Along –y-axis

(c) Along x-axis and in mA **(d)** Along +y-axis

23. In reverse biased, the resistance offered by the p-n junction is of the order of:

(a) A few MΩ **(b)** Several MΩ

(c) A few ohms **(d)** None of these

24. The semi conductor diode has the property of:

(a) Two way conduction **(b)** Zero conduction

(c) One way conduction **(d)** Amplification

25. Electrons present in P-type material due to thermal pair generation are:

(a) Majority carriers **(b)** Minority carriers

(c) Dual carriers **(d)** None of these

26. Semi conductors with donor atoms and free electrons belong to the type:

(a) n **(b)** P

(c) Both n and P **(d)** Any of above

27. P-n junction when reversed biased acts as a:

(a) Capacitor **(b)** Inductor

(c) On switch **(d)** Off switch

28. In an n-type semi conductor there are:

(a) Holes as majority carrier **(b)** Immobile positive ions

(c) Immobile negative ions **(d)** None of these

29. The width of depletion region of a junction:

(a) Increase with inverse biasing **(b)** Decrease with light doping

(c) Increase with heavy doping **(d)** None of these

30. Which one of the following has the greatest energy gap:

(a) Conductor **(b)** Semi conductor

(c) Insulator **(d)** None of these

31. Which one of the following has smallest energy gap:

(a) Conductors **(b)** Semi conductors

(c) Insulators **(d)** None of these

32. Minority carries in n-type substances are:

(a) Protons **(b)** Electrons

(c) Neutrons **(d)** Holes

33. Minority carriers in a p-type substances are:

(a) Protons **(b)** electrons

(c) Neutrons **(d)** Holes

34. A junction between p and n materials forms:

(a) An amplifier **(b)** An oscillator

(c) A detector **(d)** A semi conductor diode

35. Semi conductor diode conducts only when it is:

(a) Reverse biased **(b)** Forward biased

(c) Not biased **(d)** None of these

36. The forward current through a semi conductor diode circuit is due to:

(a) Electrons **(b)** Holes

(c) Majority carriers **(d)** Minority carriers

37. The reverse current through a semi conductor diode is due to:

(a) Electrons **(b)** Holes

(c) Majority carriers **(d)** Minority carriers

38. In pn junction, p-type end is basically referred as:

(a) Anode **(b)** Cathode

(c) Neutral **(d)** None of these

39. In half wave rectification, the output DC voltage is obtained across the load for:

(a) The negative half cycle of input AC **(b)** The positive half cycle of input AC

(c) Both the input of AC **(d)** None of the above

40. In full wave rectification, the output DC voltage is obtained across the load for:

(a) The positive half cycle of input AC **(b)** The negative half cycle of input AC

(c) Complete cycle of input AC **(d)** None of these

41. Forward resistance of p-n junction is:

(a) Few ohms **(b)** Mega ohms

(c) Infinity **(d)** Kilo ohms

42. Reverse resistance of p-n junction is:

(a) Low **(b)** Zero

(c) Very high **(d)** None of these

43. Conversion of alternating current into direct current is called:

(a) Modulation **(b)** Amplification

(c) Oscillation **(d)** Rectification

44. A region having zero charge particle:

(a) Depletion region **(b)** Potential difference

(c) Curved region **(d)** None of above

45. The potential difference across depletion region in case of Si is:

(a) 0.6 volt **(b)** 0.9 volt

(c) 0.7 volt **(d)** 0.2 volt

46. The potential difference across depletion region in case of Ge is:

(a) 0.3 volt **(b)** 0.7 volt

(c) 0.6 volt **(d)** 0.8 volt

47. The most commonly used diode for special purpose is:

(a) Light emitting diode **(b)** Photo diode

(c) Photo voltaic cell **(d)** All of above

48. A light emitting diode is made from:

(a) Germinium **(b)** Silicon

(c) Gallium arsenide **(d)** Phosphorus

49. The number of LEDs required to display all the digits is:

(a) Seven **(b)** Five

(c) Six **(d)** Eight

50. A photo diode can be used:

(a) For detection of visible light **(b)** For detection of invisible light

(c) Both (a) and (b) **(d)** As an inductor

51. The diode used for the detection of visible and in visible light is:

(a) Photodiode **(b)** Photo voltaic cell

(c) Light emitting **(d)** All of above

52. A diode, which can turn current ON and OFF in nanosecond is called:

(a) Photo voltaic cell **(b)** Light emitting diode

(c) Photodiode **(d)** None of these

53. Photodiode is operated:

(a) In the reversed biased situation **(b)** In the forward biased situation

(c) With the light incident upon it **(d)** Both (a) and (c)

54. Photo voltaic cell is also called:

(a) Solar cell **(b)** Generator

(c) Thermo couple **(d)** Thermister

55. A single photovoltaic cell produces a current of:

(a) 0.9v **(b)** 0.6v

(c) 0.5v **(d)** 6.0v

56. A single photo voltaic cell produces a current of:

(a) A few mA **(b)** A few μ A

(c) A few ampere **(d)** 1A

57. The light emitting diode emits light when it is:

(a) Reverse biased **(b)** Forward biased

(c) Both (a) and (b) **(d)** None of these

58. The specially designed semi conductor diodes used as indicator lamps in electronic circuits are:

(a) The switch **(b)** The light emitting diode

(c) The photo diode **(d)** Solar cells

59. The specially designed semi-conductor used for as fast countings in electronic circuits is:

(a) Photo diodes **(b)** Light emitting diode

(c) Photo voltaic cell **(d)** Solar cell

60. A combination of p-type and N-type substance give rise to:

(a) P-N junction **(b)** N-N-junction

(c) P-P junction **(d)** None of the above

61. When p-type of p-n-junction connected to positive end and N-type of the junction connected to the negative terminal of battery then the junction is:

(a) Reverse biased **(b)** Forward biased

(c) Neutral **(d)** None of these

62. If a reverse current of a reverse biased junction is increased to a maximum value then:

(a) Diode junction may break down **(b)** Voltage drops to zero

(c) Voltage becomes maximum **(d)** None of these

63. The forward resistance of the p-n-junction is expressed as:

(a) $r_f = \Delta v_f \times \Delta I_f$ **(b)** $r_f = \Delta v_f - \Delta I_f$

(c) $r_f = \dfrac{\Delta v_f}{\Delta I_f}$ **(d)** $r_f = \dfrac{\Delta I_f}{\Delta V_f}$

64. The semi conductor diode has the property of a:

(a) Two way conduction **(b)** One way conduction

(c) Zero conduction **(d)** None of these

65. If positive terminal of the battery is connected to n-type and negative terminal is connected to p-type then diode is:

(a) Forward biased **(b)** Reverse biased

(c) Zero biased **(d)** Not biased

66. The process due to which current flows only during alternate half cycle is known as:

(a) Half wave rectification **(b)** Full wave rectification

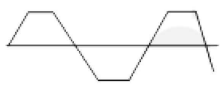
(c) Saturation **(d)** Amplification

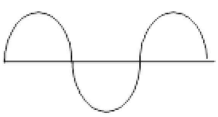
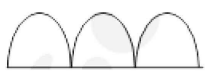
67. The circuit of full wave rectification consist of:

(a) Three diodes **(b)** Four diodes

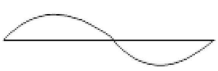
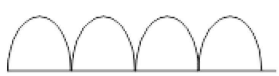
(c) Two diodes **(d)** One diode

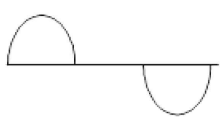
68. The wave form of an a.c voltage is:

(a)  **(b)** 

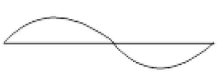
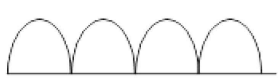
(c)  **(d)** 

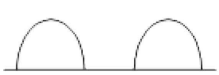
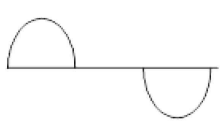
69. Which of the following diagram represents the wave form of an a.c voltage after full wave rectification:

(a)  **(b)** 

(c)  **(d)** 

70. Which of the following diagram represents the wave form of a.c voltage after half wave rectification:

(a)  **(b)** 

(c)  **(d)** 

71. Transistor was discovered by:

(a) John Bardeen **(b)** I-carrie

(c) G Bell **(d)** Young

72. A transistor has:

(a) Two region **(b)** One region

(c) Three region **(d)** Four region

73. In a certain circuit, $I_B = 40\ \mu A$, $I_C = 20$ mA:

(a) 450 amp **(b)** 0.45 amp

(c) 5 m amp **(d)** 500 amp

74. The basic condition for a transistor amplifier circuit is:

(a) The base-emitter junction should be forward biased

(b) The base-emitter junction should be reverse biased

(c) The base-collector junction should be forward biased

(d) None of these

75. Usually V_{BB} is:

(a) Larger than V_{CC} **(b)** Smaller than V_{CC}

(c) Equal to V_{CC} **(d)** None of these

76. In order that a transistor acts as switch, a larger positive potential is applied across its:

(a) Base-collector terminals **(b)** Base emitter terminals

(c) Collector emitter terminals **(d)** None of these

77. To turn the transistor OFF, the base current is set:

(a) At zero value **(b)** At maximum value

(c) At minimum value **(d)** None of these

78. Types of transistors are:

(a) Seven **(b)** Two

(c) Four **(d)** Three

79. In the transistor schematic symbol, the arrow is:

(a) Located on the base **(b)** Located on the collector

(c) Located on the emitter **(d)** None of these

80. The term transistor stands for:

(a) Transfer of resistance **(b)** Transfer of current

(c) Transfer of charge **(d)** Transfer of energy

81. The transistor in a circuit basically acts as:

(a) Power amplifier **(b)** Current amplifier

(c) Voltage amplifier **(d)** None of these

82. Transistor can be used as:

(a) Oscillator **(b)** Switches

(c) Units **(d)** All of above

83. When a transistor is used in a circuit generally:

(a) The collector-base junction is forward biased and the collector-base junction is reverse biased

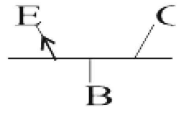
(b) Both the junctions are forward biased

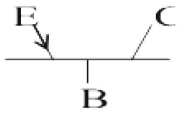
(c) Both the junction are reverse biased

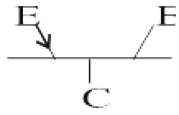
(d) None of these

84. The symbol of p-n-p transistor is:

(a) 

(b) 

(c) 

(d) 

85. The characteristic of transistor are:

(a) Temperature dependent **(b)** Sound dependent

(c) Energy dependent **(d)** Light dependent

86. Emitter base junction is always:

(a) Forward biased **(b)** Reverse biased

(c) Both forward and reverse **(d)** None of these

87. The emitter and base has concentration of impurity:

(a) Less **(b)** Zero

(c) Greater **(d)** None of these

88. Identify which device used the rectification:

(a) Inductor **(b)** Capacitor

(c) Transistor **(d)** P-n junction

89. Which one of the following device based on p-n junction:

(a) Photo diode **(b)** Light emitting diode

(c) Photo voltaic cell **(d)** All of the above

90. Light emitting diode based on:

(a) Emission of energy in the form of photons

(b) Faradays law

(c) Ionic bonding between p-type and n-type substances

(d) None of these

91. Photo diode can be used as:

(a) A automatic ON and OFF switch **(b)** Direction of light

(c) Logic gates **(d)** All of above

92. The central region of n-p-n transistor is known as:

(a) Base **(b)** Collector

(c) Emitter **(d)** None of above

93. In general, most of the electrical circuits make use of:

(a) n-n junction **(b)** p-p junction

(c) n-p-n transistor **(d)** p-n-p transistor

94. For normal transistor the emitter current can be given by:

(a) $I_E = I_C$ **(b)** $I_E = I_C + I_B$

(c) $I_E = I_B$ **(d)** None of these

95. When light emitting diode is forward biased, it emits light of colour:

(a) Yellow **(b)** Green

(c) Red **(d)** All of the above

96. The advantage of LEDs is:

(a) High operating speed **(b)** Small size

(c) Reliability **(d)** All

97. In n-p-n transistor, the current flows in the direction from:

(a) Base to emitter **(b)** Collector to emitter

(c) Emitter to base **(d)** Base to collector

98. In p-n-p transistor, the current flows in the direction from:

(a) Base to emitter **(b)** Emitter to collector

(c) Emitter to base **(d)** Base to collector

99. In a transistor which one is very thin:

(a) Base **(b)** Collector

(c) Emitter **(d)** None of these

100. The thickness of the base is of the order of:

(a) 10^{-6} m **(b)** 10^{-4} m

(c) 10^{-2} m **(d)** 10^{4} m

101. A transistor consists of three electrical contact which one of these is rectifying:

(a) Collector **(b)** Base

(c) Emitter **(d)** Both (a) and (c)

102. An expression for current gain of a transistor is given by:

(a) $\beta = \frac{I_B}{I_C}$ **(b)** $\beta = I_C + I_B$

(c) $\beta = I_C - I_B$ **(d)** $\beta = \frac{I_B}{I_C}$

103. When transistor works as an amplifier, its output is:

(a) Zero **(b)** Greater

(c) Less **(d)** Greater or less directly proportional to the input

104. An operational amplifier can be used as:

(a) Night switch **(b)** Comparator

(c) Inverting and non-inverting amplifier **(d)** All of the above

105. An operational amplifier have how many input terminals:

(a) Two **(b)** Four

(c) Three **(d)** Five

106. An operational amplifier will act as inverting amplifier, when the input signal is connected to:

(a) Earthed wire **(b)** Inverting terminal

(c) Non inverting terminal **(d)** None of these

107. The operational-amplifier is so called because it was some times used to perform mathematical operations:

(a) Chemically **(b)** Electronically

(c) Electrically **(d)** Mechanically

108. An op-amp has input terminals namely:

(a) Inverting (–) input **(b)** Non-inventing C+D

(c) Both (a) and (b) **(d)** None of these

109. The resistance between (+) and (–) inputs of an op-amp is of the order of:

(a) Several mega ohms **(b)** A few ohms

(c) Both (a) and (b) **(d)** None of these

110. To use an op-amp as an inverting amplifier, the terminal which is grounded is the:

(a) Inverting terminal **(b)** Non-inverting terminal

(c) Out put terminal **(d)** None of these

111. In case of op-amp as an inverting amplifier, $V_+ - V_- = 0$, this is because:

(a) Open gain loop is very low **(b)** Closed loop gain is very high

(c) Open loop gain is very high **(d)** Both (a) and (a)

112. In order to use the op-amp as non-inverting amplifier, the input signal is applied as:

(a) Non-inverting (+) terminal **(b)** Inverting (–) terminal

(c) Inverting (+) terminal **(d)** All of above

113. If $R_1 = 10\ k\Omega$, $R_2 = 100\ k\Omega$, the gain of the op-amp acting as inverting amplifier comes out to be:

(a) +10 **(b)** –10

(c) +0.1 **(d)** –0.1

114. The open loop gain of an op-amplifier is of the order of:

(a) 10^3 **(b)** 10^4

(c) 10^6 **(d)** 10^5

115. The number of input terminals of an op-amplifier is:

(a) Four **(b)** Two

(c) Three **(d)** One

116. Operational-amplifier has been discussed as comparator of:

(a) Voltage **(b)** Current

(c) Displacement **(d)** Electric fields

117. The operational amplifier is:

(a) A high gain amplifier **(b)** A high-power amplifier

(c) A high resistance amplifier **(d)** A low resistance amplifier

118. An op-amplifier can apply to:

(a) A.C only **(b)** D.C only

(c) Both A.C and D.C **(d)** None of these

119. Non-inverting amplifier circuit have:

(a) A very low input impedance **(b)** A very high input impedance

(c) A low output impedance **(d)** None of these

120. An expression for gain of an inverting amplifier is:

(a) $-\frac{R_2}{R_1}$ **(b)** $\frac{R_1}{R_2}$

(c) $(R_1\ R_2)$ **(d)** None of these

121. The value of open loop gain value for the amplifier is:

(a) Zero **(b)** Infinity

(c) Very high **(d)** Very low

122. An expression for gain of non-inverting amplifier is:

(a) $G = 1 + \frac{R_2}{R_1}$ **(b)** $G = 1 + \frac{R_1}{R_2}$

(c) $G = 1 - \frac{R_1}{R_2}$ **(d)** $G = 1 + R_1\ R_2$

123. A system which deals with quantities or variables which have only two discrete values or states is known as:

(a) Binary system **(b)** Logic gate

(c) Number system **(d)** Digital system

124. In describing functions of digital system, a lighted bulb will be described as:

(a) Infinity **(b)** 1

(c) 0 **(d)** None of these

125. Which of the following is basic operation of Boolean algebra:

(a) AND operation **(b)** NOT operation

(c) OR operation **(d)** All of these

126. A circuit which has two or more input signals that delivers an output when any one or more input signals are energetic is known as:

(a) AND gate **(b)** OR gate

(c) NOT gate **(d)** NOR gate

127. A circuit which has two or more input signals and which delivers an output only when every input signal is energetic is known as:

(a) OR gate **(b)** NOT gate

(c) AND gate **(d)** NOR gate

128. The logic circuit with one input and one output that inverts the input signal at the output is known as:

(a) OR gate **(b)** NOT gate

(c) AND gate **(d)** NOR gate

129. The mathematical symbol for OR operation:

(a) $X = A.B$ **(b)** $X = \overline{A \cdot B}$

(c) $X = A + B$ **(d)** $X = \overline{A + B}$

130. The mathematical symbol for AND gate is:

(a) $X = \overline{A + B}$ **(b)** $X = A.B$

(c) $X = A + B$ **(d)** $X = \overline{A \cdot B}$

131. The mathematical symbol for NOR operation is:

(a) $X = \overline{A + B}$ **(b)** $X = A.B$

(c) $X = A + D$ **(d)** $X = \overline{A \cdot B}$

132. The mathematical symbol for NAND operation is:

(a) $X = A + B$ **(b)** $X = \overline{A} \cdot \overline{B}$

(c) $X = \overline{A \cdot B}$ **(d)** $X = \overline{A + B}$

133. The logic gats are used in:

(a) Pocket calculators **(b)** Robots

(c) Digital watches **(d)** All of these

134. In describing functions of digital system, 0 represents:

(a) OFF **(b)** True

(c) ON **(d)** Lighted

135. In describing function of digital system, 1 represents:

(a) True statement **(b)** Closed switch

(c) Lighted bulb **(d)** All of above

136. The values 1 and 0 are designated as:

(a) Binary values **(b)** Continuous values

(c) Decimal values **(d)** None of these

137. The gate will recognized the voltage as high or 1 if the voltage applied to the gate is:

(a) 1.5 volt **(b)** 3.5 volt

(c) 0.5 volt **(d)** 0.7 volt

138. The gate will recognize the voltage as 1 or 0 if the voltage applied to the gate is:

(a) 3.5 volt **(b)** 0.5 volt

(c) 5.5 volt **(d)** 7.5 volt

139. In OR gate, the output is 1 if:

(a) At least one input is 1 **(b)** Both input are 1

(c) Both inputs are 0 **(d)** None of these

140. In AND gate, the output is 0 if:

(a) Both inputs are 1 **(b)** Both inputs are 0

(c) One input is Zero **(d)** None of these

141. In AND gate, the output is 1 if:

(a) Both inputs are 1 **(b)** Both inputs are 0

(c) One input is 0 **(d)** None of these

142. The gate, which performs the operation of inversion is called:

(a) NOT gate **(b)** AND gate

(c) OR gate **(d)** XOR gate

143. The gate, which changes the logic level to its opposite level is called:

(a) NOR gate **(b)** AND gate

(c) OR gate **(d)** NOT gate

144. If both the inputs given to a gate are 1, such that the output is 0 then it is:

(a) NAND gate **(b)** NOR gate

(c) XOR gate **(d)** All of these

145. If both the inputs given to a gate are 0 such that the output is 1 then it is:

(a) NAND gate **(b)** NOR gate

(c) XN, OR gate **(d)** All of these

146. XOR gate can be made by combining:

(a) NOR, AND, NOT gates **(b)** OR, AND, NOT gates

(c) OR, NAND, NOT gates **(d)** OR, NOR, NOT gates

147. XNOR gate can be made by combining:

(a) OR, NOR, NOT gate **(b)** OR, AND, NO gates

(c) OR, NAND, NOT gates **(d)** NOR, AND, NOT gates

148. At higher temperature, potential barrier voltage:

(a) Decreases **(b)** Increases

(c) No change **(d)** None

149. Width of depletion region is:

(a) 10^{-8} m **(b)** 10^{-7} m

(c) 10^{-6} m **(d)** 10^{-4} m

150. The barrier voltage is more for silicon because of its ———— atomic number allows more stability in covalent bonds.

(a) High **(b)** Low

(c) Both (a), (b) **(d)** None

151. Breakdown voltage is:

(a) 25 V **(b)** 15 V

(c) 35 V **(d)** 5 V

152. The value of reverse current for Ge is:

(a) 1 μA **(b)** 1 mA

(c) 1 A **(d)** 1 MA

153. Device used for conversion of D.C. to A.C. is:

(a) Oscillator **(b)** Rectifier

(c) Amplifier **(d)** None

154. p-n junction when reversed biased acts as a:

(a) Capacitor **(b)** On switch

(c) Off switch **(d)** None

155. Pulsating D.C. can be made smooth by using a circuit known as:

(a) Filter **(b)** Tank

(c) Accepter **(d)** All

156. A photodiode can switch its current on OR off in:

(a) nano second **(b)** milli second

(c) micro second **(d)** centi second

157. Photodiode is used in:

(a) Automatic switch **(b)** Optical communication equipment

(c) Light meters **(d)** All

158. Silicon transistors are preferred because:

(a) High operating temperature **(b)** Low leakage current

(c) Suited to high frequency circuits **(d)** All

159. Current gain of a transistor which has collector current of 10 mA and a base current of 40 μA is:

(a) 25 **(b)** 250

(c) 2500 **(d)** 25000

160. In case of common emitter amplifier, phase difference between input and out:

(a) 0° **(b)** 120°

(c) 180° **(d)** 90°

161. When transistor acts as OFF switch then voltage across collector and emitter is ———— V_{CC}.

(a) Less than **(b)** Greater than

(c) Equal to **(d)** None

162. LDR is a:

(a) Conductor **(b)** Semiconductor

(c) Insulator **(d)** None

163. During day time, when light is falling upon LDR, R_L is:

(a) Large **(b)** Unchanged

(c) Small **(d)** None

164. The photovoltaic cell is always:

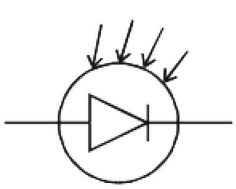
(a) Forward biased **(b)** Reverse biased

(c) No biasing is required **(d)** None

165. Under ideal conditions, the collector current is:

(a) Equal to base current **(b)** Nearly equal to emitter current

(c) Less than base current **(d)** Always zero

166. The symbol  represents:

(a) LED **(b)** Photodiode

(c) Diode **(d)** All

167. One use of a single p-n junction semiconductor in an electrical circuit is a:

(a) Rectifier **(b)** Transistor

(c) Battery **(d)** Diode

168. The main difference between intrinsic and extrinsic semiconductor, under ambient condition, is:

(a) Shape **(b)** Density

(c) Electrons **(d)** Resitivity

169. The output from a full wave rectifier is.

(a) An ac voltage **(b)** A dc voltage

(c) Zero **(d)** A pulsating unidirectional voltage

170. A piece of copper and another of germanium are cooled from room temperature to 80K. The resistance of:

(a) Each of them increases

(b) Each of them decreases

(c) Copper increases and that of germanium decreases

(d) Copper decreases and that of germanium increases

171. The electrical conductivity of a semiconductor increases if electromagnetic radiation of wavelength shorter than 2066 nm is incident on it. The band gap energy (in eV) for the semiconductor is very nearly equal to.

(a) 0.5 **(b)** 0.6

(c) 0.8 **(d)** 1.2

ANSWERS

1.	(b)	**2.**	(b)	**3.**	(b)	**4.**	(c)	**5.**	(a)
6.	(d)	**7.**	(a)	**8.**	(b)	**9.**	(c)	**10.**	(a)
11.	(c)	**12.**	(b)	**13.**	(a)	**14.**	(c)	**15.**	(a)
16.	(d)	**17.**	(c)	**18.**	(a)	**19.**	(c)	**20.**	(c)
21.	(c)	**22.**	(c)	**23.**	(b)	**24.**	(c)	**25.**	(b)
26.	(a)	**27.**	(d)	**28.**	(b)	**29.**	(a)	**30.**	(c)
31.	(a)	**32.**	(d)	**33.**	(b)	**34.**	(d)	**35.**	(b)
36.	(c)	**37.**	(d)	**38.**	(a)	**39.**	(b)	**40.**	(b)
41.	(a)	**42.**	(c)	**43.**	(d)	**44.**	(a)	**45.**	(c)
46.	(a)	**47.**	(d)	**48.**	(c)	**49.**	(a)	**50.**	(c)
51.	(a)	**52.**	(c)	**53.**	(d)	**54.**	(a)	**55.**	(b)
56.	(a)	**57.**	(b)	**58.**	(b)	**59.**	(a)	**60.**	(a)
61.	(b)	**62.**	(a)	**63.**	(c)	**64.**	(b)	**65.**	(b)
66.	(a)	**67.**	(b)	**68.**	(c)	**69.**	(b)	**70.**	(c)
71.	(a)	**72.**	(c)	**73.**	(d)	**74.**	(a)	**75.**	(a)
76.	(b)	**77.**	(a)	**78.**	(b)	**79.**	(c)	**80.**	(a)
81.	(b)	**82.**	(d)	**83.**	(a)	**84.**	(c)	**85.**	(a)
86.	(a)	**87.**	(c)	**88.**	(d)	**89.**	(d)	**90.**	(a)
91.	(d)	**92.**	(a)	**93.**	(c)	**94.**	(b)	**95.**	(d)
96.	(d)	**97.**	(a)	**98.**	(c)	**99.**	(a)	**100.**	(a)
101.	(d)	**102.**	(d)	**103.**	(d)	**104.**	(d)	**105.**	(a)
106.	(c)	**107.**	(b)	**108.**	(c)	**109.**	(a)	**110.**	(b)
111.	(c)	**112.**	(a)	**113.**	(b)	**114.**	(d)	**115.**	(b)
116.	(a)	**117.**	(a)	**118.**	(a)	**119.**	(b)	**120.**	(a)
121.	(c)	**122.**	(a)	**123.**	(b)	**124.**	(b)	**125.**	(a)
126.	(b)	**127.**	(c)	**128.**	(b)	**129.**	(c)	**130.**	(b)
131.	(a)	**132.**	(b)	**133.**	(d)	**134.**	(a)	**135.**	(d)
136.	(a)	**137.**	(b)	**138.**	(b)	**139.**	(a)	**140.**	(b)
141.	(a)	**142.**	(a)	**143.**	(d)	**144.**	(d)	**145.**	(d)
146.	(b)	**147.**	(d)	**148.**	(a)	**149.**	(c)	**150.**	(b)
151.	(a)	**152.**	(b)	**153.**	(a)	**154.**	(c)	**155.**	(a)
156.	(a)	**157.**	(d)	**158.**	(d)	**159.**	(b)	**160.**	(c)
161.	(c)	**162.**	(b)	**163.**	(c)	**164.**	(c)	**165.**	(b)
166.	(b)	**167.**	(a)	**168.**	(d)	**169.**	(d)	**170.**	(d)
171.	(c)								