SRINIX COLLEGE OF ENGINEERING,BALASORE

PROBABLE QUESTIONS AND ANSWERS

1ST SEMESTER

SUBJECT-BETC BRANCH-ALL (SEC-B)

Q1.A semiconductor is formed by …… bonds.

1. Covalent
2. Electrovalent
3. Co-ordinate
4. None of the above

Answer : 1

2.A semiconductor has …… temperature coefficient of resistance.

1. Positive
2. Zero
3. Negative
4. None of the above

Answer : 3

Q3. The most commonly used semiconductor is ……..

1. Germanium
2. Silicon
3. Carbon
4. Sulphur

Answer : 2

Q4. A semiconductor has generally …… valence electrons.

1. 2
2. 3
3. 6
4. 4

Answer : 4

Q5. The resistivity of pure germanium under standard conditions is about …….

1. 6 x 10^{4}
2. Ω cm
3. 60
4. Ω cm
5. 3 x 10^{6}
6. Ω cm
7. 6 x 10^{-4}
8. Ω cm

Answer : 2

Q6. The resistivity of a pure silicon is about ……

1. 100 Ω cm
2. 6000 Ω cm
3. 3 x 10^{5} Ω m
4. 6 x 10^{-8} Ω cm

Answer : 2

Q7. When a pure semiconductor is heated, its resistance ……..

1. Goes up
2. Goes down
3. Remains the same
4. Can't say

Answer : 2

Q8. The strength of a semiconductor crystal comes from ……..

1. Forces between nuclei
2. Forces between protons
3. Electron-pair bonds
4. None of the above

Answer : 3

Q9. When a pentavalent impurity is added to a pure semiconductor, it becomes ……

1. An insulator
2. An intrinsic semiconductor
3. p-type semiconductor
4. n-type semiconductor

Answer : 4

Q10. Addition of pentavalent impurity to a semiconductor creates many ……..

1. Free electrons
2. Holes
3. Valence electrons
4. Bound electrons

Answer : 1

Q11. A pentavalent impurity has ……. Valence electrons

1. 3
2. 5
3. 4
4. 6

Answer : 2

A12. An n-type semiconductor is ……

1. Positively charged
2. Negatively charged
3. Electrically neutral
4. None of the above

Answer : 3

Q13. A trivalent impurity has ….. valence electrons

1. 4
2. 5
3. 6
4. 3

Answer : 4

A14. Addition of trivalent impurity to a semiconductor creates many ……..

1. Holes
2. Free electrons
3. Valence electrons
4. Bound electrons

Answer : 1

Q15. A hole in a semiconductor is defined as …….

1. A free electron
2. The incomplete part of an electron pair bond

3. A free proton
4. A free neutron

Answer : 2

Q16. The impurity level in an extrinsic semiconductor is about ….. of pure semiconductor.

1. 10 atoms for 10^8 atoms
2. 1 atom for 10^8 atoms
3. 1 atom for 10^4 atoms
4. 1 atom for 100 atoms

Answer : 2

Q17. As the doping to a pure semiconductor increases, the bulk resistance of the semiconductor ……..

1. Remains the same
2. Increases
3. Decreases
4. None of the above

Answer : 3

Q18. A hole and electron in close proximity would tend to …….

1. Repel each other
2. Attract each other
3. Have no effect on each other
4. None of the above

Answer : 2

Q19. In a semiconductor, current conduction is due to ……..

1. Only holes
2. Only free electrons
3. Holes and free electrons
4. None of the above

Answer : 3

Q20. The random motion of holes and free electrons due to thermal agitation is called …….

1. Diffusion
2. Pressure
3. Ionisation
4. None of the above

Answer : 1

21.A forward biased pn junction diode has a resistance of the order of

1. Ω
2. kΩ
3. MΩ
4. None of the above

Answer : 1

Q22. The battery connections required to forward bias a pn junction are ……

1. +ve terminal to p and –ve terminal to n
2. -ve terminal to p and +ve terminal to n
3. -ve terminal to p and –ve terminal to n
4. None of the above

Answer : 1

Q23. The barrier voltage at a pn junction for germanium is about ……

3. 5 V
4. 3 V
5. Zero

6. 3 V

Answer : 4

Q24. In the depletion region of a pn junction, there is a shortage of ……..

1. Acceptor ions
2. Holes and electrons
3. Donor ions
4. None of the above

Answer : 2

Q25. A reverse bias pn junction has ……

1. Very narrow depletion layer
2. Almost no current
3. Very low resistance
4. Large current flow

Answer : 2

Q26. A pn junction acts as a …….

1. Controlled switch
2. Bidirectional switch
3. Unidirectional switch
4. None of the above

Answer : 3

Q27. A reverse biased pn junction has resistance of the order of

1. Ω
2. kΩ
3. MΩ
4. None of the above

Answer : 3

Q28. The leakage current across a pn junction is due to ……..

1. Minority carriers
2. Majority carriers
3. Junction capacitance
4. None of the above

Answer : 1

Q29. When the temperature of an extrinsic semiconductor is increased, the pronounced effect is on……

1. Junction capacitance
2. Minority carriers
3. Majority carriers
4. None of the above

Answer : 2

Q30. With forward bias to a pn junction , the width of depletion layer ……

1. Decreases
2. Increases
3. Remains the same
4. None of the above

Answer : 1

Q31. The leakage current in a pn junction is of the order of

1. Aa
2. mA
3. kA
4. μA

Answer : 4

Q32. In an intrinsic semiconductor, the number of free electrons ……

1. Equals the number of holes
2. Is greater than the number of holes
3. Is less than the number of holes
4. None of the above

Answer : 1

Q33. At room temperature, an intrinsic semiconductor has …….

1. Many holes only
2. A few free electrons and holes
3. Many free electrons only
4. No holes or free electrons

Answer : 2

Q34. At absolute temperature, an intrinsic semiconductor has …….

1. A few free electrons
2. Many holes
3. Many free electrons
4. No holes or free electrons

Answer : 4

Q35. At room temperature, an intrinsic silicon crystal acts approximately as ……

1. A battery
2. A conductor
3. An insulator
4. A piece of copper wire

Answer : 3

Q36. Under normal conditions a diode conducts current when it is ……

1. reverse biased
2. forward biased
3. avalanched
4. saturated

Answer : 2

Q37. The term bias in electronics usually means …….

1. the value of ac voltage in the signal.
2. the condition of current through a pn junction.
3. the value of dc voltages for the device to operate properly.
4. the status of the diode.

Answer : 3

38.A crystal diode has ……

1. one pn junction
2. two pn junctions
3. three pn junctions
4. none of the above

Answer : 1

39.A crystal diode has forward resistance of the order of ……

1. kΩ
2. Ω
3. MΩ
4. none of the above

Answer : 2

Q40. If the arrow of crystal diode symbol is positive w.r.t. bar, then diode is …….. biased.

1. forward
2. reverse
3. either forward or reverse

4. none of the above

Answer : 1

Q41. The reverse current in a diode is of the order of …….

1. kA
2. mA
3. μA
4. A

Answer : 3

Q42. The forward voltage drop across a silicon diode is about ……

1. 2.5 V
2. 3 V
3. 10 V
4. 0.7 V

Answer : 4

Q43. A crystal diode is used as ……

1. an amplifier
2. a rectifier
3. an oscillator
4. a voltage regulator

Answer : 2

Q44. The d.c. resistance of a crystal diode is …….. its a.c. resistance

1. the same as
2. more than
3. less than
4. none of the above

Answer : 3

Q45. An ideal crystal diode is one which behaves as a perfect …….. when forward biased.

1. conductor
2. insulator
3. resistance material
4. none of the above

Answer : 1

Q46. The ratio of reverse resistance and forward resistance of a germanium crystal diode is about …….

1. 1 : 1
2. 100 : 1
3. 1000 : 1
4. 40,000 : 1

Answer : 4

Q 47. The leakage current in a crystal diode is due to …….

1. minority carriers
2. majority carriers
3. junction capacitance
4. none of the above

Answer :1

Q48. If the temperature of a crystal diode increases, then leakage current ……..

1. remains the same
2. decreases
3. increases
4. becomes zero

Answer :3

Q49. The PIV rating of a crystal diode is …….. that of equivalent vacuum diode

1. the same as
2. lower than
3. more than
4. none of the above

Answer :2

Q50. If the doping level of a crystal diode is increased, the breakdown voltage…….

1. remains the same
2. is increased
3. is decreased
4. none of the above

Answer :3

Q51. The knee voltage of a crystal diode is approximately equal to …….

1. applied voltage
2. breakdown voltage
3. forward voltage
4. barrier potential

Answer :4

Q52. When the graph between current through and voltage across a device is a straight line, the device is referred to as …….

1. linear
2. active
3. nonlinear
4. passive

Answer :1

Q53. When the crystal current diode current is large, the bias is ……

1. forward
2. inverse
3. poor
4. reverse

Answer :1

Q54. A crystal diode is a …… device

1. non-linear
2. bilateral
3. linear
4. none of the above

Answer :1

Q55. A crystal diode utilises …….. characteristic for rectification

1. reverse
2. forward
3. forward or reverse
4. none of the above

Answer :2

Q56. When a crystal diode is used as a rectifier, the most important consideration is ……..

1. forward characteristic
2. doping level
3. reverse characteristic
4. PIC rating

Answer :4

Q57. If the doping level in a crystal diode is increased, the width of depletion layer……..

1. remains the same
2. is decreased

3. in increased
4. none of the above

Answer :3

Q58. A zener diode has ……..

1. one pn junction
2. two pn junctions
3. three pn junctions
4. none of the above

Answer :1

Q59. A zener diode is used as …….

1. an amplifier
2. a voltage regulator
3. a rectifier
4. a multivibrator

Answer :2

Q60. The doping level in a zener diode is …… that of a crystal diode

1. the same as
2. less than
3. more than
4. none of the above

Answer :3

Q61. A zener diode is always …… connected.

1. reverse
2. forward
3. either reverse or forward
4. none of the above

Answer :1

Q62.A zener diode utilizes …….. characteristics for its operation.

1. forward
2. reverse
3. both forward and reverse
4. none of the above

Answer :2

Q63. In the breakdown region, a zener didoe behaves like a …… source.

1. constant voltage
2. constant current
3. constant resistance
4. none of the above

Answer :1

Q64. A zener diode is destroyed if it……..

1. is forward biased
2. is reverse biased
3. carrier more than rated current
4. none of the above

Answer :3

Q65. A series resistance is connected in the zener circuit to……..

1. properly reverse bias the zener
2. protect the zener
3. properly forward bias the zener
4. none of the above

Answer :2

A66. A zener diode is ……. device

1. a non-linear
2. a linear
3. an amplifying
4. none of the above

Answer :1

Q67. A zener diode has …….. breakdown voltage

1. undefined
2. sharp
3. zero
4. none of the above

Answer :2

Q68. ……. rectifier has the lowest forward resistance

1. solid state
2. vacuum tube
3. gas tube
4. none of the above

Answer :1

Q69. Mains a.c. power is converrted into d.c. power for ……..

1. lighting purposes
2. heaters
3. using in electronic equipment
4. none of the above

Answer :3

Q70. The disadvantage of a half-wave rectifier is that the…….

1. components are expensive
2. diodes must have a higher power rating
3. output is difficult to filter
4. none of the above

Answer :3

Q71. If the a.c. input to a half-wave rectifier is an r.m.s value of 400/√2 volts, then diode PIV rating is …….

1. 400/√2 V
2. 400 V
3. 400 x √2 V
4. none of the above

Answer :2

Q72. The ripple factor of a half-wave rectifier is ……

1. 2
2. 1.21
3. 2.5
4. 0.48

Answer :2

Q73. There is a need of transformer for ……..

1. half-wave rectifier
2. centre-tap full-wave rectifier
3. bridge full-wave rectifier
4. none of the above

Answer :2

Q74. The PIV rating of each diode in a bridge rectifier is …… that of the equivalent centre-tap rectifier

1. one-half
2. the same as

3. twice
4. four times

Answer :1

Q75. For the same secondary voltage, the output voltage from a centre-tap rectifier is …… than that of bridge rectifier

1. twice
2. thrice
3. four time
4. one-half

Answer :4

Q76. If the PIV rating of a diode is exceeded, ……

1. the diode conducts poorly
2. the diode is destroyed
3. the diode behaves like a zener diode
4. none of the above

Answer :2

Q77. A 10 V power supply would use ……. as filter capacitor.

1. paper capacitor
2. mica capacitor
3. electrolytic capacitor
4. air capacitor

Answer :3

Q78.A 1,000 V power supply would use …….. as a filter capacitor

1. paper capacitor
2. air capacitor
3. mica capacitor
4. electrolytic capacitor

Answer :1

Q79. The …….. filter circuit results in the best voltage regulation

1. choke input
2. capacitor input
3. resistance input
4. none of the above

Answer :1

Q80. A half-wave rectifier has an input voltage of 240 V r.m.s. If the step-down transformer has a turns ratio of 8:1, what is the peak load voltage? Ignore diode drop.

1. 27.5 V
2. 86.5 V
3. 30 V
4. 42.5 V

Answer :4

Q81. The maximum efficiency of a half-wave rectifier is ……..

1. 40.6 %
2. 81.2 %
3. 50 %
4. 25 %

Answer :1

Q82. The most widely used rectifier is …….

1. half-wave rectifier
2. centre-tap full-wave rectifier
3. bridge full-wave rectifier
4. none of the above

Answer :3

Q83. A transistor has ……

1. one pn junction
2. two pn junctions
3. three pn junctions
4. four pn junctions

Answer : 2

Q84.The number of depletion layers in a transistor is ……

1. four
2. three
3. one
4. two

Answer : 4

Q85.. The base of a transistor is …….. doped

1. heavily
2. moderately
3. lightly
4. none of the above

Answer : 3

Q86. The element that has the biggest size in a transistor is ……..

1. collector
2. base
3. emitter
4. collector-base-junction

Answer : 1

Q87. In a pnp transistor, the current carriers are …….

1. acceptor ions
2. donor ions
3. free electrons
4. holes

Answer : 4

Q88. The collector of a transistor is ……. doped

1. heavily
2. moderately
3. lightly
4. none of the above

Answer : 2

Q88. A transistor is a …… operated device

1. current
2. voltage
3. both voltage and current
4. none of the above

Answer : 1

Q89. In a npn transistor, ……. are the minority carriers

1. free electrons
2. holes
3. donor ions
4. acceptor ions

Answer : 2

Q90. The emitter of a transistor is …… doped

1. lightly
2. heavily

3. moderately
4. none of the above

Answer : 2

Q91. In a transistor, the base current is about …….. of emitter current

1. 25%
2. 20%
3. 35 %
4. 5%

Answer : 4

Q92. At the base-emitter junctions of a transistor, one finds ……

1. a reverse bias
2. a wide depletion layer
3. low resistance
4. none of the above

Answer : 3

Q93. The input impedance of a transistor is ……

1. high
2. low
3. very high
4. almost zero

Answer : 2

Q94. Most of the majority carriers from the emitter ……..

1. recombine in the base
2. recombine in the emitter
3. pass through the base region to the collector
4. none of the above

Answer :3

Q95. The current I_B is ……

1. electron current
2. hole current
3. donor ion current
4. acceptor ion current

Answer : 1

Q96. In a transistor ……..

$I_C = I_E + I_B$
$I_B = I_C + I_E$
$I_E = I_C – I_B$
$I_E = I_C + I_B$

Answer : 4

Q97. The value of α of a transistor is …….

- more than 1
- less than 1
- 1
- none of the above

Answer : 2

Q98. $I_C = \alpha I_E$ + ……..

1. I_B
2. I_{CEO}
3. I_{CBO}
4. βI_B

Answer : 3

Q99. The output impedance of a transistor is ……..

1. high
2. zero
3. low
4. very low

Answer : 1

Q100. In a tansistor, I_C = 100 mA and I_E = 100.2 mA. The value of β is ……

1. 100
2. 50
3. about 1
4. 200

Answer : 4

Q101. In a transistor if β = 100 and collector current is 10 mA, then I_E is ……

1. 100 mA
2. 100.1 mA
3. 110 mA
4. none of the above

Answer : 2

Q102. The relation between β and α is ……..

1. $\beta = 1 / (1 - \alpha)$
2. $\beta = (1 - \alpha) / \alpha$
3. $\beta = \alpha / (1 - \alpha)$
4. $\beta = \alpha / (1 + \alpha)$

Answer : 3

Q103. The value of β for a transistor is generally ……..

1. 1
2. less than 1
3. between 20 and 500
4. above 500

Answer : 3

Q103. The most commonly used transistor arrangement is …… arrangement

1. common emitter
2. common base
3. common collector
4. none of the above

Answer : 1

Q104. The input impedance of a transistor connected in …….. arrangement is the highest

1. common emitter
2. common collector
3. common base
4. none of the above

Answer : 2

Q105. The output impedance of a transistor connected in ……. arrangement is the highest

1. common emitter
2. common collector
3. common base
4. none of the above

Answer : 3

Q106. The phase difference between the input and output voltages in a common base arrangement is …….

1. 180^o

2. 90^o
3. 270^o
4. 0^o

Answer : 4

Q107. The power gain in a transistor connected in ……. arrangement is the highest

1. common emitter
2. common base
3. common collector
4. none of the above

Answer : 1

Q108. The phase difference between the input and output voltages of a transistor connected in common emitter arrangement is ……

1. 0^o
2. 180^o
3. 90^o
4. 270^o

Answer : 2

Q109. The voltage gain in a transistor connected in ……. arrangement is the highest

1. common base
2. common collector
3. common emitter
4. none of the above

Answer : 3

Q110. As the temperature of a transistor goes up, the base-emitter resistance ……

1. decreases
2. increases
3. remains the same
4. none of the above

Answer : 1

Q111. The voltage gain of a transistor connected in common collector arrangement is ……..

1. equal to 1
2. more than 10
3. more than 100
4. less than 1

Answer : 4

Q112. The phase difference between the input and output voltages of a transistor connected in common collector arrangement is ……

1. 180^o
2. 0^o
3. 90^o
4. 270^o

Answer : 2

Q113. $I_C = \beta I_B +$ ……..

1. I_{CBO}
2. I_C
3. I_{CEO}
4. αI_E

Answer : 3

Q114. $I_C = [\alpha / (1 - \alpha)] I_B +$ …….

1. I_{CEO}

2. I_{CBO}
3. I_C
4. $(1 – \alpha) I_B$

Answer : 1

Q115. $I_C = [\alpha / (1 – \alpha)] I_B + […….. / (1 – \alpha)]$

1. I_{CBO}
2. I_{CEO}
3. I_C
4. I_E

Answer : 1

Q116. BC 147 transistor indicates that it is made of ……..

1. germanium
2. silicon
3. carbon
4. none of the above

Answer : 2

Q117. $I_{CEO} = (……) I_{CBO}$

1. β
2. $1 + \alpha$
3. $1 + \beta$
4. none of the above

Answer : 3

Q118. A transistor is connected in CB mode. If it is not connected in CE mode with same bias voltages, the values of I_E, I_B and I_C will ……..

1. remain the same
2. increase
3. decrease
4. none of the above

Answer : 1

Q119. If the value of α is 0.9, then value of β is ……..

1. 9
2. 0.9
3. 900
4. 90

Answer : 4

Q120. In a transistor, signal is transferred from a …… circuit

1. high resistance to low resistance
2. low resistance to high resistance
3. high resistance to high resistance
4. low resistance to low resistance

Answer : 2

Q121. The arrow in the symbol of a transistor indicates the direction of …….

1. electron current in the emitter
2. electron current in the collector
3. hole current in the emitter
4. donor ion current

Answer : 3

Q122. The leakage current in CE arrangement is ……. that in CB arrangement

1. more than
2. less than
3. the same as
4. none of the above

Answer : 1

Q.123.Transistor biasing represents ……. conditions

1. a.c.
2. d.c.
3. both a.c. and d.c.
4. none of the above

Answer : 2

Q.124.Transistor biasing is done to keep …… in the circuit

1. Proper direct current
2. Proper alternating current
3. The base current small
4. Collector current small

Answer : 1

Q125. Operating point represents ……..

1. Values of I_C and V_{CE} when signal is applied
2. The magnitude of signal
3. Zero signal values of I_C and V_{CE}
4. None of the above

Answer : 3

Q126. If biasing is not done in an amplifier circuit, it results in ……

1. Decrease in the base current
2. Unfaithful amplification
3. Excessive collector bias
4. None of the above

Answer : 2

Q127. Transistor biasing is generally provided by a …….

1. Biasing circuit
2. Bias battery
3. Diode
4. None of the above

Answer : 1

Q128. For faithful amplification by a transistor circuit, the value of V_{BE} should ……. for a silicon transistor

1. Be zero
2. Be 0.01 V
3. Not fall below 0.7 V
4. Be between 0 V and 0.1 V

Answer : 3

Q129. For proper operation of the transistor, its collector should have ……

1. Proper forward bias
2. Proper reverse bias
3. Very small size
4. None of the above

Answer : 2

Q130. For faithful amplification by a transistor circuit, the value of V_{CE} should …….. for silicon transistor

1. Not fall below 1 V
2. Be zero
3. Be 0.2 V
4. None of the above

Answer : 1

Q131. The circuit that provides the best stabilization of operating point is ……

1. Base resistor bias
2. Collector feedback bias
3. Potential divider bias
4. None of the above

Answer : 3

Q132. The point of intersection of d.c. and a.c. load lines represents ……..

1. Operating point
2. Current gain
3. Voltage gain
4. None of the above

Answer : 1

Q133. An ideal value of stability factor is ……..

1. 100
2. 200
3. More than 200
4. 1

Answer : 4

Q134. The zero signal I_C is generally …… mA in the initial stages of a transistor amplifier

1. 4
2. 1
3. 3
4. More than 10

Answer : 2

Q135. If the maximum collector current due to signal alone is 3 mA, then zero signal collector current should be at least equal to ……..

1. 6 mA
2. mA
3. 3 mA
4. 1 mA

Answer : 3

Q136. The disadvantage of base resistor method of transistor biasing is that it ……

1. Is complicated
2. Is sensitive to changes in ß
3. Provides high stability
4. None of the above

Answer : 2

Q137. The biasing circuit has a stability factor of 50. If due to temperature change, ICBO changes by 1 µA, then I_C will change by ……

1. 100 µA
2. 25 µA
3. 20 µA
4. 50 µA

Answer : 4

Q138. For good stabilsation in voltage divider bias, the current I_1 flowing through R1 and R2 should be equal to or greater than

1. 10 I_B
2. 3 I_B
3. 2 I_B
4. 4 I_B

Answer : 1

Q139. The leakage current in a silicon transistor is about …… the leakage current in a germanium transistor

1. One hundredth
2. One tenth
3. One thousandth
4. One millionth

Answer : 3

Q140. The operating point is also called the …….

1. Cut off point
2. Quiescent point
3. Saturation point
4. None of the above

Answer : 2

Q141. For proper amplification by a transistor circuit, the operating point should be located at the …….. of the d.c. load line

1. The end point
2. Middle
3. The maximum current point
4. None of the above

Answer : 2

Q142. The operating point …… on the a.c. load line

1. Also line
2. Does not lie
3. May or may not lie
4. Data insufficient

Answer : 1

Q143. The disadvantage of voltage divider bias is that it has …….

1. High stability factor
2. Low base current
3. Many resistors
4. None of the above

Answer : 3

Q144.Thermal runaway occurs when …….

1. Collector is reverse biased
2. Transistor is not biased
3. Emitter is forward biased
4. Junction capacitance is high

Answer : 2

Q145. The purpose of resistance in the emitter circuit of a transistor amplifier is to …….

1. Limit the maximum emitter current
2. Provide base-emitter bias
3. Limit the change in emitter current
4. None of the above

Answer : 3

Q146. In a transistor amplifier circuit $V_{CE} = V_{CB} +$ ……..

1. V_{BE}
2. $2V_{BE}$
3. $5\ V_{BE}$
4. None of the above

Answer : 1

Q147. The base resistor method is generally used in ……

1. Amplifier circuits
2. Switching circuits
3. Rectifier circuits
4. None of the above

Answer : 2

Q148. For germanium transistor amplifier, V_{CE} should …….. for faithful amplification

1. Be zero
2. Be 0.2 V
3. Not fall below 0.7 V
4. None of the above

Answer : 3

Q149. In a base resistor method, if the value of β changes by 50, then collector current will change by a factor ……

1. 25
2. 50
3. 100
4. 200

Answer : 2

Q150. The stability factor of a collector feedback bias circuit is …….. that of base resistor bias.

1. The same as
2. More than
3. Less than
4. None of the above

Answer : 3

Q151. In the design of a biasing circuit, the value of collector load R_C is determined by ……

1. V_{CE} consideration
2. V_{BE} consideration
3. I_B consideration
4. None of the above

Answer : 1

Q152. If the value of collector current I_C increases, then the value of V_{CE} ……

1. Remains the same
2. Decreases
3. Increases
4. None of the above

Answer : 2

Q153. If the temperature increases, the value of V_{CE} ……

1. Remains the same
2. Is increased
3. Is decreased
4. None of the above

Answer : 3

Q154. The stabilisation of operating point in potential divider method is provided by …….

1. R_E consideration
2. R_C consideration
3. V_{CC} consideration
4. None of the above

Answer: 1

Q155. The value of V_{BE} …….

1. Depends upon I_C to moderate extent
2. Is almost independent of I_C
3. Is strongly dependant on I_C
4. None of the above

Answer : 2

Q156. When the temperature changes, the operating point is shifted due to …….

1. Change in I_{CBO}
2. Change in V_{CC}
3. Change in the values of circuit resistance
4. None of the above

Answer : 1

Q157. The value of stability factor for a base resistor bias is ……

1. R_B (β+1)
2. (β+1)R_C
3. (β+1)
4. 1-β

Answer : 3

Q158. In a particular biasing circuit, the value of R_E is about ……

1. 10 kΩ
2. 1 MΩ
3. 100 kΩ
4. 800 Ω

Answer : 4

Q159. A silicon transistor is biased with base resistor method. If β=100, V_{BE} =0.7 V, zero signal collector current I_C = 1 mA and V_{CC} = 6V , what is the value of the base resistor R_B?

1. 105 kΩ
2. 530 kΩ
3. 315 kΩ
4. None of the above

Answer : 2

Q160. In voltage divider bias, V_{CC} = 25 V; R_1 = 10 kΩ; R_2 = 2.2 V ; R_C = 3.6 V and R_E =1 kΩ. What is the emitter voltage?

1. 6.7 V
2. 5.3 V
3. 4.9 V
4. 3.8 V

Answer : 4

Q161. In the above question (Q38.) , what is the collector voltage?

5. 3 V
6. 8 V
7. 6 V
8. 7 V

Answer : 1

Q162. In voltage divider bias, operating point is 3 V, 2 mA. If V_{CC} = 9 V, R_C = 2.2 kΩ, what is the value of R_E ?

1. 2000 Ω
2. 1400 Ω
3. 800 Ω
4. 1600 Ω

Answer : 3