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TEST

BEC MSBTE TEST 5

QUESTIONS

SECTIONS

1. Choose appropriate option - 191 Questions

Section 1 : Choose appropriate option - 191 Questions

1 An alternating (ac) quantity (voltage, current or power) is defined as the one which changes its _____ as well as _____ with respect to time.

- Value, direction
- Phase, polarity
- Value, phase

Correct: +1

2 All the home appliances such as TV, washing machine etc operate on _____.

- AC voltage
- DC voltage
- AC or DC voltage

Correct: +1

3 A _____ is a graph of magnitude of a quantity with respect to time.

- plot
- picture
- shape

Correct: +1

4 Eventhough an ac waveform can take any shape, the _____ is the most prefered waveform of all.

- squarewave
- sinewave
- triangular wave

Correct: +1

5 In the equation $v(t)=V_m \sin 2\pi ft$ the term $v(t)$ denotes the _____ voltage.

- peak
- RMS
- Instantaneous

Correct: +1

6 In the term $v(t)$ the t in brackets indicates that_____.

- voltage V is a variable

Time t depends on voltage

Correct: +1

7 A sinusoidal waveform can be _____ or _____.

Sinewave, triangular

Sinewave, cosine wave

Triangular, squarewave

Correct: +1

8 The operation of an alternate is based on the principle of _____.

Mutual inductance

Dynamically induced emf

Electromagnetic induction

Correct: +1

9 The AC voltage generators are called as _____.

Alternators

Induction generators

Alternating generator

Correct: +1

10 The magnitude of induced voltage into the coil of an alternator depends on _____ of the rotating coil.

- Material
- Position
- Thickness

Correct: +1

11 The shapes of induced emf in the rotating coil of an alternator is _____.

- Cosine wave
- Sinewave
- Rectified sinewave

Correct: +1

12 The instantaneous value of voltage at $t=t_1$ is represented as _____.

- $v(t = t_1)$
- $v(t = t_1)$
- $v(t_1)$
- v/t_1

Correct: +1

- DC value
- Instantaneous value
- Peak value
- RMS value

Correct: +1

14 1 cycle = _____.

- π radians
- 180°
- 2π radians

Correct: +1

15 Each repetition consisting of one positive and one indetical negative part is called as _____ of the waveform.

- Time period
- One cycle
- Frequency

Correct: +1

16 Time period T = Time corresponding to _____.

- One cycle
- Two cycles.

Correct: +1

17 _____ is defined as the time taken in seconds by the waveform of an ac quantity to complete one cycle.

- Time period
- Wavelength
- Frequency

Correct: +1

18 The frequency fo ac mains voltage is_____.

- 50 Hz
- 60 Hz
- 50 sec.
- 25 sec.

Correct: +1

19 The frequency of an ac quantity is measured in _____ or Hz.

- Unit/sec.

Cycles per sec.

Sec per cycle

Correct: +1

20 An alternating current is given by $i = 14.14 \sin 377t$. Its frequency is _____.

377 Hz

188.5 Hz

50 Hz

60 Hz

Correct: +1

21 The maximum value of an ac quantity is called as its _____.

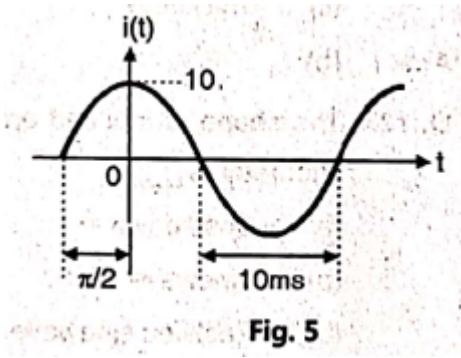
Amplitude

Peak to peak value

RMS value

Correct: +1

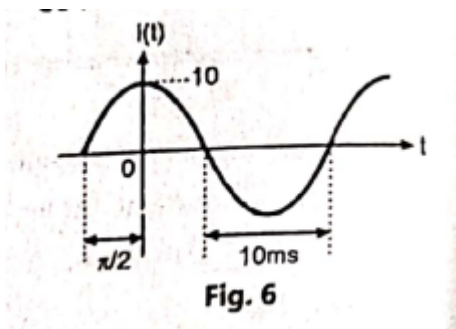
22 The time period of the waveform shown in Fig. 5 is _____.



- 10 ms.
- 20 msec.
- 5msec.

Correct: +1

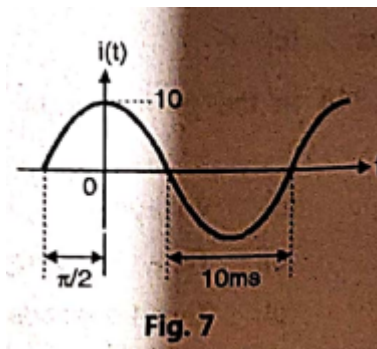
23 The frequency of the waveform shown in Fig.6 is _____.



- 10 Hz.
- 100 Hz.
- 50 Hz
- 25 Hz.

Correct: +1

24 The _____ of the waveform shown in Fig. 7 is 10 A.



- Amplitude
- Frequency
- RMS value
- Peak to peak value

Correct: +1

25 The _____ is also called as amplitude.

- RMS value
- Peak value
- Average value

Correct: +1

26 _____ is the rate of change of angle ωt with respect to time.

- One cycle

Angular velocity

Frequency

Correct: +1

27 The relation between angular velocity and frequency is _____.

$f = 2\pi\Omega$

$f = 2\pi/\Omega$

$\Omega = 2\pi f$

$\Omega = 2\pi/f$

Correct: +1

28 The units of angular velocity is _____.

Cycles per sec.

Radians

Radians per sec.

None of these

Correct: +1

29 Peak to peak values are most often used when measuring the magnitude on the _____.

Cathode Ray Oscilloscope (CRO)

Digital multimeter

Correct: +1

30 _____ is the voltage measured from the baseline of an ac waveform to its maximum or peak level.

Average voltage

Peak voltage

Peak to peak voltage

Correct: +1

31 _____ value of a sinewave is $0.707 V_m$.

Average

Peak to peak

RMS

Correct: +1

32 Rms value is also called as _____ of ac current.

Light producing component

Heat producing component

Useless component

Correct: +1

33 An alternating current is given by $i = 14.14 \sin 377t$. what is its rms value ?

14.14 A

10 A

377 A

None of these

Correct: +1

34 Amount of light produced by a lamp or the amount of heat produced by an iron is proportional to the_____.

Square of rms value

RMS value

Square of average value

Average value

Correct: +1

35 The ac voltmeter or ammeter indicates the _____ value.

Average

Peak

Correct: +1

36 Average value of a full cycle of a symmetrical ac waveform is _____.

2 Average

Zero

Arbitrary.

Correct: +1

37 An alternating current is given by $i=14.14 \sin 377t$. Its average value is _____.

14.14 A

377 A

10 A

9 A

Correct: +1

38 The _____ value of a waveform is also known as its mean value.

RMS

Peak

39 The average value of a sinusoidal waveform is _____.

- 0.637 Ims
- 0.707 Ims
- 0.673 Im

Correct: +1

40 The average value of a symmetrical ac waveform is determined from _____ of the waveform.

- Full cycle
- Half cycle
- Full or half cycle

Correct: +1

41 The average value of _____ waveform is obtained for one complete cycle.

- Asymmetrical
- Symmetrical
- Even symmetric
- Odd symmetric

Correct: +1

42 The maximum value (peak value or amplitude) of an alternating quantity is called as the _____ value of the quantity.

- Rms
- Crest
- Average

Correct: +1

43 The value of peak factor for a sinusoidal waveform is _____.

- 1
- 1.414
- 0
- 0.707

Correct: +1

44 The peak factor is also known as the _____ factor.

- Form
- Trough
- Crest
- None of these

45 The _____ value is required in the applications such as dc motor control, battery chargers etc.

- Average
- Peak
- Rms
- Peak to peak

Correct: +1

46 The _____ of an aleternating quantity is defined as the ratio of its RMS value to its average value.

- Peak factor
- Form factor
- Crest factor

Correct: +1

47 The value of form factor for a sinusoidal waveform is _____.

- 0.909
- 1.11
- 0.637

48 The form factor for a _____ waveform is 1.11

- Any
- Square
- Sinusoidal
- Triangular

Correct: +1

49 A sinusoidal current has peak factor 1.4 and form factor 1.1. Its average value is 20A. Then its rms value is _____ A and peak value is _____ A.

- 22, 30.8
- 30.8, 22
- 18.18, 25.7

Correct: +1

50 The correct formula for peak factor is $k_p =$ _____.

- V_p/V_{av}
- V_{RMS}/V_{av}
- V_m/V_{Rms}

V_{p-p}/V_{Rms}

Correct: +1

51 The correct expression for the form factor is $k_p = \underline{\hspace{2cm}}$.

I_m/I_{av}

I_{ms}/I_{av}

I_m/I_{Rms}

I_{p-p}/I_{Rms}

Correct: +1

52 Form factor is a $\underline{\hspace{2cm}}$ quantity.

Negative

Dimensionless

Fictitious

Correct: +1

53 Form factor is always $\underline{\hspace{2cm}}$.

Greater than 1

Less than 1

54 The ac single phase supply voltage is _____ volts at a frequency of _____ Hz.

- 110, 50
- 110, 60
- 230, 60
- 230, 50

Correct: +1

55 The frequency of a three phase ac supply is _____.

- 50 Hz
- 60 Hz
- 150 Hz
- 180 Hz

Correct: +1

56 The 3 phase voltages are displaced by _____ radians from each other.

- $\pi/2$
- $\pi/3$

π

Correct: +1

57 If phase voltages V_R is represented by $V_m \sin \quad$ then the phase voltage V_B is represented by _____.

$V_m \sin (\Omega t + 240^\circ)$

$V_m \sin (\Omega t + 120^\circ)$

$V_m \sin (\Omega t - 120^\circ)$

Correct: +1

58 If V_R is considered as reference V_Y _____ V_R by _____.

Leads, 120°

Lags, 120°

Lags, 240°

Leads, 240°

Correct: +1

59 Normally the phase sequence in a three phase system is _____.

R-B-Y

B-Y-R

R-Y-B

Correct: +1

60 The vector addition of three phase voltages at any instant is _____.

$3 \times 230 = 690 \text{ V}$

$\sqrt{3} \times 230 = 398 \text{ V}$

400 V

0 V.

Correct: +1

61 The _____ not present in delta system.

Phase voltages are

line voltages

Neutral point is

Correct: +1

62 The _____ system is always a 3 point system.

Star

Delta

63 The phase shift between adjacent line voltages is _____.

- 90°
- 60°
- 120°
- 240°

Correct: +1

64 The number of phase voltages in any system is ____.

- 2
- 3
- 6
- 4

Correct: +1

65 VRY is a _____ voltage for a star load.

- line
- phase

66 Typically the rms phase voltage is ___ V.

- 400
- 240
- 440
- 110

Correct: +1

67 Typically the rms line voltage is _____ V.

- 240
- 415
- 110
- 220

Correct: +1

68 For a star connected load if the phases voltage is 120 V then the line voltage will be ___ V.

- 120
- 69.3

207.8

Correct: +1

69 For a star connected load. $I_L =$ _____.

$\sqrt{3} I_{ph}$

$I_{ph} \sqrt{3}$

I_{ph}

None of these

Correct: +1

70 If the rms phase voltage for a star load is 230 V then the peak phase voltage $V_m(\text{ph})$ _____ V.

230

$230 \sqrt{3} = 398.4$

$230 \sqrt{3} = 132.8$

$230 \sqrt{2} = 325.3$

Correct: +1

71 For a delta load if the line voltage is 415 V then the phase voltage will be ___ V.

415

239.6

Correct: +1

72 If dc is applied to the primary then there is a possibility of _____ of transformer.

damage

core saturation

short circuit

Correct: +1

73 For a transformer the frequency of secondary voltage is _____ that of the primary voltage.

Higher than

Lower than

Equal to

Correct: +1

74 A transformer operates on the principle of_____.

Dynamic electromagnetic induction

Static electromagnetic induction

Fleming's laws of electromagnetic induction

Correct: +1

75 A transformer cannot operate on _____.

- AC voltage
- DC voltage
- Cosine voltage

Correct: +1

76 The material used for the construction of the transformer core is _____.

- Silicon steel
- Cast iron
- Reinforced iron

Correct: +1

77 The _____ in a transformer acts as an insulator as well as coolant.

- Wire insulation
- Laminations
- Oil

Correct: +1

78 The core of transformer is in the form of a rectangular frame made from laminations.

shell type

berry type

Correct: +1

79 The core type transformer provides _____ magnetic circuits.

one

two

more than two

Correct: +1

80 The cylindrical windings are used for _____ transformer.

core

shell

berry

Correct: +1

81 In the _____ type transformer the windings encircle the core.

shell

core

82 For the _____ type transformer, the core encircles the winding.

- core
- shell
- berry

Correct: +1

83 For the _____ type transformers the primary and secondary windings are placed on the central limb of the core.

- core
- shell
- berry

Correct: +1

84 The _____ type of transformer provides double magnetic circuit.

- core
- shell
- berry

Correct: +1

85 For the _____ type transformer the sandwiched windings are used.

- core
- shell
- berry

Correct: +1

86 An alternating current is given by $i = 14.14 \sin 377t$. Its time period is _____.

- 20 ms
- 16.67 ms
- 2.65 ms
- 5.3 ms

Correct: +1

87 _____ is defined as the number of cycles completed by an alternating quantity in one second.

- Frequency
- Amplitude
- Angular velocity

Correct: +1

88 _____ value of a waveform is also called as its effective value.

Peak

Rms

Correct: +1

89 The domestic ac supply is _____ phase _____ supply.

3 Φ , dc

1 Φ , dc

1 Φ , ac

Correct: +1

90 In practice the number of phases in a polyphase ac system is _____.

1

2

3

4

Correct: +1

91 For a balanced delta load the overall power factor is _____ that of each phase.

Three times

Not related to

Correct: +1

92 _____ is used to convert energy of one form to other form.

Diode

Semiconductor

BJT

Transducer

Correct: +1

93 Two parts of transducers are_____.

sensing element and transduction element

P type and N type semiconductor

conductor and insulator

electrical and mechanical

Correct: +1

94 Function of transducer is_____.

amplify input signal

- detect parameter and to provide a proportional electrical output
- to emit light

Correct: +1

95 Two types of characterized of transducers are _____.

- forward and reverse biased characteristics
- voltage and current characteristics
- static and dynamic characteristics
- internal and external characteristics

Correct: +1

96 Identify dynamic characteristics of transducers are _____.

- span
- fidelity
- error
- range

Correct: +1

97 Identify dynamic characteristics of transducer _____.

precision

error

range

Correct: +1

98 Linearity of transducer is a _____

dynamic characteristics

not required characteristics

static characteristics

VI characteristics

Correct: +1

99 _____ is a primary transducer.

Photodiode

Thermocouple

Quartz crystal

Bourdon tube

Correct: +1

- primary transducer LVDT
- accuracy dynamic characteristics
- secondary transducer thermocouple
- active transducer RTD

Correct: +1

101 _____ is an example of an active transducer.

- RTD
- Thermocouple
- LVDT
- Strain gauge

Correct: +1

102 Electrical transducer converts _____.

- electrical signal to non-electrical signal
- electrical energy to mechanical energy
- photo energy to sound energy
- non-electrical energy to electrical energy

103 LVDE is a_____.

- resistive transducer
- capacitive transducer
- inductive transducer
- active transducer

Correct: +1

104 Form following list identify resistive transducer_____.

- RVDT
- RTD
- Thermocouple
- Bourdon tube

Correct: +1

105 In LVDT, output voltage_____.

- $E_o = E_{S1} - E_{S2}$
- $E_o = E_{S1} + E_{S2}$

$E_o = E_{S1} \times E_{S2}$

$E_o = E_{S1} / E_{S2}$

Correct: +1

106 In LVDT, secondly windings are connected in_____.

parallel addition

parallel opposition

series addtion

series opposition

Correct: +1

107 Thermocouple is based on_____.

Ohm's law

kelvin theorem

Seebeck effect

piezoelectric effort

Correct: +1

108 Identify thermal transducer from the following list_____.

photo diode

LVDT

RTD

LED

Correct: +1

109 _____ is an optical sensor.

photo diode

LVDT

Thermocouple

Zener diode

Correct: +1

110 Passive transducer requires external _____ energy along with mechanical parameter as input.

optical

electrical

thermal

static

111 Thermocouple is a _____ transducer.

- variable resistance
- variable capacitance
- voltage generating
- variable inductance

Correct: +1

112 _____ is an example of magnetic transducer .

- LVDT
- RTD
- Thermocouple
- Strain gauge

Correct: +1

113 LVDT has _____ .

- movable magnetic core
- movable primary
- two primary windings

- single secondary windings

Correct: +1

114 The major drawback of piezo electric transducer is that_____.

- it cannot sense dynamic pressure
- it can measure only force
- it is very compact
- it cannot sense static pressure

Correct: +1

115 Resolution of transducre depends on_____.

- linearity
- operation range
- type of transducer
- measuring lag

Correct: +1

116 Sensitivity of transducer can be determined using_____.

- input characteristics

transfer characteristics

accuracy

Correct: +1

117 Fidelity of transducer is related to its _____.

operating frequency

frequency response

physical Size

resolution

Correct: +1

118 Photo transistor is a _____.

photo emissive transducer

photovoltaic transducer

photoconductive transducer

photosensitive transducer

Correct: +1

119 Piezoelectric transducer uses _____ material.

- aluminium
- quartz crystal
- iron

Correct: +1

120 Transducer are not suitable for_____.

- automation
- instrumentation
- measurement
- rectification

Correct: +1

121 Resolution of transducer depends on_____.

- range
- measuring lag
- operating temperature
- loading effect

Correct: +1

- Reliability
- Accuracy
- Linearity
- Measuring lag

Correct: +1

123 If sensitivity is same on required range of input signal for transducer, then it gives better _____.

- linearity
- accuracy
- resolution
- precision

Correct: +1

124 For transducer, precision is a measure of _____.

- error
- repeatability
- linearity
- response time

125 Accuracy depends on _____.

- error
- repeatability
- linearity
- response time

Correct: +1

126 Drawback of inductive proximity sensor is_____.

- its output depends on colour of objects
- it is moisture sensitvie
- it can detect only metals
- it has mechanical moving parts

Correct: +1

127 Inductive proximity sensor is based on_____.

- elctromagnetic principle
- ultrasonic principle
- optical principle

thermionic principle

Correct: +1

128 Proximity sensor is a _____.

contact type switch

contactless switch

thermal switch

pressure switch

Correct: +1

129 From following list identify device which is not a optical transducer _____.

photo diode

photo transistor

LDR

LED

Correct: +1

130 A piezo-electric transducer is used to conver _____.

mechanical vibration to electrical energy

variable liquid level to electrical energy

optical energy to electrical energy

Correct: +1

131 Select the material not suitable for piezoelectric transducer.

RTD

LVDT

photo diode

Piezo-electric crystal

Correct: +1

132 Select the material not suitable for piezoelectric transducer.

Rochelle salt

Quartz

BaTiO₂

Silicon

Correct: +1

133 Capacitive transducer is a _____.

- contactless transducer
- thermal transducer
- optical transducer

Correct: +1

134 In capacitive transducer, capacitance does not depend on_____.

- dielectric material
- distance between two plates
- area of dielectric material
- environmental temperature

Correct: +1

135 Capacitive transducer is suitable for_____.

- object detection
- level measurement
- temperature measurement
- light intensity measurement

Correct: +1

- buffer
- oscillator
- rectifier
- SMPS

Correct: +1

137 In thermocouple, thermo e.m.f. depends on _____.

- hot and cold junction temperature
- light intensity
- presence of nearby object
- pressure

Correct: +1

138 Identify digital transducer _____.

- shaft encoder
- thermocouple
- LVDT
- RTD

139 Digital transducer output is _____.

- sine signal
- variable amplitude signal
- pulses
- mechanical vibrations

Correct: +1

140 RTD has a _____.

- positive temperature coefficient
- negative temperature coefficient
- wide negative temperature range
- integrated circuit form

Correct: +1

141 In computer system on motherboard, to sense temperature, _____ is used.

- thermocouple
- RTD
- thermistor

IC based temperature sensor

Correct: +1

142 BJT is a _____.

voltage operating device

power controlled device

current controlled device

passive device

Correct: +1

143 A BJT is in saturation region if _____.

base emitter junction is forward biased and base collector junction is reverse biased

base emitter junction is reverse biased and base collector junction is forward biased

both junctions are forward biased

both junctions are reverse biased

Correct: +1

144 For BJT, doping concentration is high in _____.

base region

collector region

all three regions

Correct: +1

145 If BJT is operating with both of its junction forward biased then it is operating in _____.

saturation state

active state

cut-off state

non-operating state

Correct: +1

146 β is a notation for current gain in _____.

common base configuration

common emitter configuration

common collector configuration

diode circuits

Correct: +1

147 α is a notation for current gain in _____.

- common emitter configuration
- common collector configuration
- diode circuits

Correct: +1

148 Magnitude of α is_____.

- <1
- 0
- more than 1
- less than 0

Correct: +1

149 Magnitude of β is_____.

- <1
- 0
- more than 1
- less than 0

Correct: +1

C>B>E

E>B>C

B>E>C

C>E>B

Correct: +1

151 To operate BJT in active state, base collector junction is _____ and base emitter junction is _____.

forward biased, reverse biased

forward biased, forward biased

reverse biased, reverse biased

reverse biased, forward biased

Correct: +1

152 Identify BJT configuration giving highest current gain as _____.

common base

common emitter

common collector

reverse configuration

153 For BJT, select correct option_____.

- $I_E > I_C$
- $I_E < I_C$
- $I_E \approx I_C$
- no relation between I_E and I_C

Correct: +1

154 Three types of operating modes of BJT are_____.

- forward bias mode, cut-off mode, reverse bias mode
- conducting mode, partially conducting mode and stop mode
- transfer mode, static mode and dynamic mode
- active mode, saturation mode and cut-off mode

Correct: +1

155 For BJT in any configuration, input is not applied to_____and output is not obtained from

- base, gate
- collector, base

emitter, base

gate, emitter

Correct: +1

156 In CE configuration, input is applied to _____ and output is obtained from _____.

base, collector

collector, base

emitter, base

collector, emitter

Correct: +1

157 In CB configuration, input is applied to _____ and output is obtained from _____.

base, collector

collector, base

emitter, collector

collector, emitter

Correct: +1

158 In CC configuration, input is applied to _____ and output is obtained from _____.

- collector, base
- emitter, collector
- base, emitter

Correct: +1

159 Voltage gain of common collector (CC) configuration is_____.

- very high
- zero
- nearly one
- more than 100

Correct: +1

160 _____configuration of BJT can be used as buffer circuit.

- CC
- CB
- CE
- CG

Correct: +1

- base
- collector
- gate
- emitter

Correct: +1

162 From following list of terminal, identify which is FET terminal ?

- drain
- source
- base
- gate

Correct: +1

163 In BJT amplifier circuit, the function of C_{in} capacitor is _____.

- increasing gain
- increasing bandwidth
- blocking DC signal components
- increasing stability

164 In BJT amplifier circuit function of CE capacitor connected in parallel with RE emitter resistor is_____.

- increasing gain
- increasing bandwidth
- blocking DC signal components
- increasing stability

Correct: +1

165 To operate BJT as a switch, it is operated in_____.

- active and cut-off mode
- active and saturation mode
- forward and reverse bias mode
- cut-off and saturation mode

Correct: +1

166 In saturaion state of BJT, BE junction is _____ and BC junction is _____.

- reverse bised, forward biased
- reverse biased, reverse biased
- forward biased, reverse biased

forward biased, forward biased

Correct: +1

167 In cut-off state of BJT, BE junction is _____ and BC junction is _____.

reverse biased, forward biased

reverse biased, reverse biased

forward biased, reverse biased

forward biased, forward biased

Correct: +1

168 In active off state of BJT, BE junction is _____ and BC junction is _____.

reverse biased, forward biased

reverse biased, reverse biased

forward biased, reverse biased

forward biased, forward biased

Correct: +1

169 For BJT, if both junctions are revrese biased then it acts as _____.

open switch

amplifier

oscillator

Correct: +1

170 For BJT, if both junctions are forward biased then it acts as _____.

open switch

close switch

amplifier

oscillator

Correct: +1

171 FET is a _____.

non-semiconductor device

bipolar device

light emitting device

unipolar device

Correct: +1

172 For FET, the amplification factor is a _____ of transductance (g_m) and dynamic drain resistance(r_d).

- product
- division
- subtraction

Correct: +1

173 In FET amplification factor (μ) is a ratio of_____.

- change in V_{ds} to change in V_{gs}
- output current to input current
- output Voltage to input current
- change in I_d to change in V_{gs}

Correct: +1

174 For FET, pinch-off voltage is_____

- positive
- zero
- negative
- any type

Correct: +1

- Zero
- maximum
- negative
- double

Correct: +1

176 Input resistance of FET is _____.

- zero
- megaohm
- fraction of ohm
- few kilovolts

Correct: +1

177 The value of transconductance is expressed in _____

- ohm
- lumen
- lux
- siemens S or mhos μ

178 For drain characteristics curve of FET, three regions are_____.

- ohmic region, pinch-off region, breakdown region
- forward region, saturation region, reverse region
- pinch-off region, cut-off region, amplification region
- ohmic region, switching region, cut-off region

Correct: +1

179 As reverse biased voltage across gate and source increases, drain current_____.

- increases
- decreases
- becomes zero
- does not get affected

Correct: +1

180 CMOS devices are constructed using_____

- two C channel devices
- P channel and N channel devices
- two N channel devices

- two P channel devices

Correct: +1

181 Two operating modes of depletion type MOSFET are _____

- saturation mode and ohmic mode
- depletion mode and enhancement mode
- depletion mode and saturation mode
- forward mode and reverse mode

Correct: +1

182 _____ can be used as a voltage dependent resistor.

- Zener diode
- BJT
- FET
- LED

Correct: +1

183 FET is commonly used than BJT to fabricate IC because of _____.

- less power consumption and compact size

easily available and more noisy

available in two types.

Correct: +1

184 For FET, when reverse biased voltage across gate and source increases, depletion layer _____.

increases

decreases

becomes zero

not affected

Correct: +1

185 Identify BJT operating state for the conditions $I_c=0$ and $V_o=V_{cc}$

BJT amplifier

BJT ON state switch

BJT OFF state switch

BJT saturation state

Correct: +1

186 RC coupled amplifiers are commonly used for _____ amplification.

- audio signal
- RF single frequency signal
- zero to very high frequency signal

Correct: +1

187 Calculate and select the correct option for bandwidth if lower cut-off frequency is 100 Hz and higher cut-off frequency is 20 kHz.

- 20.1 kHz
- 21 kHz
- 19900 Hz
- 20 kHz

Correct: +1

188 If highest voltage gain of amplifier is 60, calculate and select the correct option for gain to find bandwidth from frequency response.

- 60
- 120
- 42.42
- 57

Correct: +1

189 If gain of first stage is 20 and gain of second stage is 5, calculate and select the correct option for overall gain of two-stage amplifier.

- 25
- 15
- 20
- 100

Correct: +1

190 If current gain in common base configuration α is 0.99 then calculate current gain in common emitter configuration.

- 99
- 9
- 0.99
- 0.1

Correct: +1

191 Calculate collector current if emitter current is 100 mA and base current is 2 mA.

- 102 mA
- 200 mA

50 mA

Correct: +1

TEST

BEC MSBTE TEST 5

ANSWERS

SECTIONS

1. Choose appropriate option - 191 Questions

Section 1 : Choose appropriate option - 191 Questions

- 1 Value, direction
- 2 AC voltage
- 3 waveform
- 4 sinewave
- 5 Instantaneous
- 6 Time t is a variable
- 7 Sinewave, cosine wave
- 8 Electromagnetic induction
- 9 Alternators
- 10 Position
- 11 Sinewave

12 $v(t_1)$

13 Instantaneous value

14 2π radians

15 Time period

16 One cycle

17 Time period

18 50 Hz

19 Cycles per sec.

20 60 Hz

21 Amplitude

22 20 msec.

23 10 Hz.

24 Amplitude

25 Peak value

26 Angular velocity

27 $\Omega = 2\pi f$

28 Radians per sec.

29 Cathode Ray Oscilloscope (CRO)

30 Peak voltage

31 RMS

32 Heat producing component

33 10 A

34 Square of rms value

35 Average

36 2 Average

37 9 A

38 Average

39 0.673 Im

40 Half cycle

41 Asymmetrical

42 Crest

43 1.414

44 Crest

45 Average

46 Form factor

47 1.11

48 Sinusoidal

49 22, 30.8

50 V_m/V_{Rms}

51 I_m/I_{Rms}

52 Dimensionless

53 Greater than 1

54 230, 50

55 50 Hz

56 $2\pi/3$

57 $V_m \sin(\Omega t + 120^\circ)$

58 Lags, 120°

59 R-Y-B

60 0 V.

61 Neutral point is

62 Delta

63 60°

64 3

65 line

66 240

67 415

68 207.8

69 I_{ph}

70 $230\sqrt{2} = 325.3$

71 415

72 damage

73 Equal to

74 Static electromagnetic induction

75 DC voltage

76 Silicon steel

77 Off

78 core type

79 one

80 core

81 core

82 shell

83 shell

84 shell

85 shell

86 16.67 ms

87 Frequency

88 Rms

89 $1\Phi, ac$

90 3

91 Same as

92 Transducer

93 sensing element and transduction element

94 to emit light

95 static and dynamic characteristics

96 fidelity

97 measuring lag

98 static characteristics

99 Bourdon tube

100 secondary transducer thermocouple

101 Thermocouple

102 non-electrical energy to electrical energy

103 inductive transducer

104 RTD

105 $E_o = E_{S1} - E_{S2}$

106 series opposition

107 Seebeck effect

108 RTD

109 photo diode

110 electrical

111 voltage generating

112 LVDT

113 movable magnetic core

114 it cannot sense static pressure

115 operation range

116 transfer characteristics

117 frequency response

118 photosensitive transducer

119 quartz crystal

120 rectification

121 range

122 Linearity

123 linearity

124 repeatability

125 error

126 it can detect only metals

127 electromagnetic principle

128 contactless switch

129 LED

130 mechanical vibration to electrical energy

131 Piezo-electric crystal

132 Silicon

133 contact type transducer

134 environmental temperature

135 level measurement

136 buffer

137 hot and cold junction temperature

138 shaft encoder

139 pulses

140 positive temperature coefficient

141 IC based temperature sensor

142 current controlled device

143 both junctions are forward biased

144 emitter region

145 saturation state

146 common emitter configuration

147 common base configuration

148 < 1

149 more than 1

150 E>B>C

151 forward biased, reverse biased

152 common collector

153 $I_E > I_C$

154 active mode, saturation mode and cut-off mode

155 collector, base

156 base, collector

157 emitter, collector

158 base, emitter

159 nearly one

160 CC

161 gate

162 base

163 blocking DC signal components

164 increasing gain

165 cut-off and saturation mode

166 forward biased, forward biased

167 reverse biased, reverse biased

168 forward biased, reverse biased

169 open switch

170 close switch

171 unipolar device

172 product

173 change in V_{ds} to change in V_{gs}

174 negative

175 Zero

176 megaohm

177 siemens S or mhos μ

178 ohmic region, pinch-off region, breakdown region

179 decreases

180 P channel and N channel devices

181 depletion mode and enhancement mode

182 FET

183 less power consumption and compact size

184 increases

185 BJT OFF state switch

186 audio signal

187 19900 Hz

188 42.42

189 100

190 99

191 98 mA