Default for CIT236
The default category for questions shared in context 'CIT236'.
Fill in the Blank (FBQs)
FBQ1
The efficiency of rectification is given by the ratio of the output DC power to the total amount of ___ power supplied to the circuit

Input
1.0000000

0.0000000
FBQ2
The differentiator is basically a _____-pass filter

High
1.0000000

0.0000000
FBQ3
Normally, bipolar ___ transistors behave as current-controlled devices.

Junction
1.0000000

0.0000000

0.0000000

0.0000000
FBQ4
Field-effect transistors act as a _____-controlled device.

Voltage
1.0000000

0.0000000

0.0000000

0.0000000
FBQ5

Consider the block diagram of the pnp transistor shown above, the part labelled â€˜Xâ€™ is called

Collector
1.0000000

0.0000000

0.0000000

0.0000000
FBQ6

Consider the block diagram of the pnp transistor shown above, the part labelled â€˜Yâ€™ is called _____.

Base
1.0000000

0.0000000

0.0000000

0.0000000
FBQ7

Consider the block diagram of the pnp transistor shown above, the part labelled â€˜Zâ€™ is called?_____.

Emitter
1.0000000

0.0000000

0.0000000

0.0000000
FBQ8
Generally, the line drawn based on the direct current operating characteristics of the circuit is referred to as a ___ line

Load
1.0000000

0.0000000

0.0000000

0.0000000
FBQ9
When identifying the endpoints of a load line, IC(max) is calculated by assuming that VCE is equal to -----_____.

Zero
1.0000000
0
1.0000000

0.0000000

0.0000000
FBQ10
The voltage ___ is the ratio between the output voltage and the input voltage

Gain
1.0000000

0.0000000
FBQ11
The _____ is responsible for stepping down the voltage level of incoming AC mains supply

Transformer
1.0000000

0.0000000

0.0000000

0.0000000
FBQ12
The _____ current power supply utilizes the step down transformer

Direct
1.0000000

0.0000000

0.0000000

0.0000000
FBQ13
The JFET is always operated with the Gate to Source voltage in _____ bias.

Reverse
1.0000000

0.0000000

0.0000000

0.0000000
FBQ14
In the common collect configuration of a BJT, the input terminal is the base while the output terminal is the -----_and the collector is common to both the input and the output.

Emitter
1.0000000

0.0000000

0.0000000

0.0000000
FBQ15
The ____ gate is also referred to as a universal gate, because it can be used to simulate the functions of â€˜ORâ€™, â€˜ANDâ€™ and â€˜NOTâ€™ gates.

NOR
1.0000000

0.0000000

0.0000000

0.0000000
FBQ16
A DC power supply whose terminal voltage remains constant regardless of the amount of current drawn from it is known as a ------ power supply.

Regulated
1.0000000

0.0000000

0.0000000

0.0000000
FBQ17
_____ factor is the ratio of the rms value of AC components of the output to the DC value of the load voltage

Ripple
1.0000000

0.0000000

0.0000000

0.0000000
FBQ18
The _____ gate can also be realized using the diode and the transistor

AND
1.0000000

0.0000000

0.0000000

0.0000000
FBQ19
In Boolean algebra, A + (B âˆ™ C) = (A + B) (A + C) is an example of _____ law.

Distributive
1.0000000

0.0000000

0.0000000

0.0000000
FBQ20
In a DC power supply, a _____ converts the AC signal to DC.

Rectifier
1.0000000

0.0000000

0.0000000

0.0000000
FBQ21
A Junction Field Effect Transistor has three terminals namely: source, drain and --- _____.

Gate
1.0000000

0.0000000

0.0000000

0.0000000
FBQ22
_____ inverse voltage is the maximum voltage the diode has to withstand without

failing when it is non-conducting.

Peak
1.0000000

0.0000000

0.0000000

0.0000000
FBQ23
In the common emitter configuration, the input terminal is the base while the output terminal is the _____ and the emitter is common to both the input and the output.

Collector
1.0000000

0.0000000

0.0000000

0.0000000
FBQ24
In the DC analysis of transistors amplifiers, all capacitors are regarded as ___ circuits.

Open
1.0000000

0.0000000

0.0000000

0.0000000
FBQ25
In a DC power supply, the easiest way to smooth a circuit is by adding a _____ in parallel to the resistive load.

Capacitor
1.0000000

0.0000000

0.0000000

0.0000000
FBQ26
_____ regulation is defined as ratio of change in output to a given change in input supply voltage of a voltage regulator circuit.

Line
1.0000000

0.0000000

0.0000000

0.0000000
FBQ27
_____ regulation is the change in output voltage between no load current condition and full load current condition, expressed as a percentage.

Load
1.0000000

0.0000000

0.0000000

0.0000000
FBQ28
_____ regulators control or maintain a constant DC voltage output by continuously adjusting the voltage drop across a power transistor connected between the unregulated input and the load.

Series
1.0000000

0.0000000

0.0000000

0.0000000
FBQ29
_____ protection circuits prevent the current through the series pass transistor from exceeding a predetermined value.

Overload
1.0000000

0.0000000

0.0000000

0.0000000
FBQ30
The measure of the AC components present in the rectifier output is known as _____ factor.

Ripple
1.0000000

0.0000000

0.0000000

0.0000000
FBQ31
The load lines enables the visualization of the _____ characteristics

Transistor
1.0000000

0.0000000

0.0000000

0.0000000
FBQ32
Basic laws of Boolean algebra are implemented as switching devices called _____ gates

Logic
1.0000000

0.0000000

0.0000000

0.0000000
FBQ33
A heat _____ is a metallic material attached to an integrated circuit chip or a high power dissipating transistor to increase the total surface area from which heat can dissipate.

Sink
1.0000000

0.0000000

0.0000000

0.0000000
FBQ34
In the laws of Boolean algebra, (A + B) = (B + A) is an example of _____ law

Commutative
1.0000000

0.0000000

0.0000000

0.0000000
FBQ35
In Boolean algebra, (A + B) + C = A + (B + C) is an example of _____ law.

Associative
1.0000000
Associate
1.0000000

0.0000000

0.0000000
FBQ36

For the logic gate shown above, if the inputs A = 1 and B = 1, the output Q is equal to _____. (numeric answer only)

0
1.0000000

0.0000000

0.0000000

0.0000000
FBQ37

For the logic gate shown above, if the input A = 0 and B = 1, the output Q is equal to _____. (numeric answer only)

1
1.0000000

0.0000000

0.0000000

0.0000000

FBQ38

For the logic gate shown above, if the input A = 0 and B = 0, the output Q is equal to _____. (numeric answer only)

1
1.0000000

0.0000000

0.0000000

0.0000000
FBQ39

For the logic gate shown above, if the input A = 1 and B = 1, the output Q is equal to _____. (numeric answer only)

1
1.0000000

0.0000000

0.0000000

0.0000000
FBQ40

For the logic gate shown above, if the input A = 0 and B = 0, the output Q is equal to _____. (numeric answer only)

1
1.0000000

0.0000000

0.0000000

0.0000000
FBQ41

For the logic gate shown above, if the input A = 0 and B = 1, the output Q is equal to _____. (numeric answer only)

0
1.0000000

0.0000000

0.0000000

0.0000000
FBQ42
A digital signal 101011 is applied to a NOT gate. The output is equal to _____.

010100
1.0000000

0.0000000

0.0000000

0.0000000
FBQ43

Consider the truth table shown above, the value of Q is equal to _____.

1
1.0000000

0.0000000

0.0000000

0.0000000
FBQ44
The _____ gate is a logic gate which will give a high output if and only if all its inputs are high.

AND
1.0000000

0.0000000

0.0000000

0.0000000
FBQ45
_____ map is used for simplifying logic design by describing all possible combinations of the variables present in the logic function of interest

Karnaugh
1.0000000
K
1.0000000

0.0000000

0.0000000
FBQ46
Line _____ is defined as ratio of change in output to a given change in input supply voltage.

Regulation
1.0000000

0.0000000

0.0000000

0.0000000
FBQ47
The â€˜_____ operating areaâ€™ is defined as the area on the V and I curve within which the device can be operated without the risk of failure or degradation.

Safe
1.0000000

0.0000000

0.0000000

0.0000000
FBQ48
The transistor when operating as a switch is biased in the saturation or cutoff region but for the transistor to be used as an amplifier, it is biased in the _____ region.

Active
1.0000000

0.0000000

0.0000000

0.0000000
FBQ49
For a _____ feedback system, the feedback voltage is 180o out of phase with the input voltage.

Negative
1.0000000

0.0000000

0.0000000

0.0000000
FBQ50
The _____ feedback arrangement is often unstable and is mostly used in the design of oscillators.

Positive
1.0000000

0.0000000

0.0000000

0.0000000
Multiple Choice Questions (MCQs)
MCQ1
The ___ is NOT a Bipolar Junction Transistor configuration.

Common output

1.0000000
Common emitter

0.0000000
Common collector

0.0000000
Common base

0.0000000
MCQ2
The transistor is a three-terminal semiconductor device which can be used for _____ and switching

Moderating

0.0000000
Transferring

0.0000000
Amplification

1.0000000
Routing

0.0000000
MCQ3
The base-emitter (BE) junction of a Bipolar Junction Transistor (BJT) acts like a diode when it is _____-biased

Forward

1.0000000
Reverse

0.0000000
positively

0.0000000
negatively

0.0000000
MCQ4
Why is the common emitter (CE) configuration preferred for amplifiers in circuit design?

The gain for the CB configuration is always less than 1

0.0000000
The CC and CE configurations both have a high gain

0.0000000
The input impedance of the CE configuration is higher than that of the CC

1.0000000
It enables the visualization of the transistor characteristics

0.0000000
MCQ5
The load line is a line drawn based on the _____ operating characteristics of the circuit.

Direct current

1.0000000

Alternative current

0.0000000
current

0.0000000
voltage

0.0000000
MCQ6
___ can be defined as the setting up of the DC voltages and current in an electronic circuit

Biasing

1.0000000
switch

0.0000000
amplifier

0.0000000
operation

0.0000000
MCQ7
Which of the following options is NOT normally found in an amplifier circuit?

The Current Circuit

1.0000000
The Bias Circuit

0.0000000
The Load Circuit

0.0000000
The Coupling Circuit

0.0000000
MCQ8
Which of the following options is used to calculate the voltage gain?

Output voltage / Input voltage

1.0000000
Input voltage / Terminal voltage

0.0000000

Input voltage / Output voltage

0.0000000
Output voltage / Terminal voltage

0.0000000
MCQ9
___ is NOT true about the positive feedback arrangement of a feedback amplifier?

The feedback voltage is 180 O out of phase with the input voltage

1.0000000
This arrangement is mainly used for in oscillator design

0.0000000
It leads to instability in systems

0.0000000
The arrangement increases the input voltage amplitude

0.0000000
MCQ10
The ratio of the rms value of AC components to the DC value of load voltage is referred to as the _____

Rectification Factor

1.0000000
Voltage Regulation

0.0000000
Form Factor

0.0000000
Ripple Factor

0.0000000
MCQ11
In the Series Derived Shunt-Fed Feedback Topology, the input is connected in _____

Series

0.0000000
Sequence

0.0000000
Parallel

1.0000000
Linear

0.0000000
MCQ12
Zener diode can be applied in the following application areas except _____?

Voltage Converter

1.0000000
Voltage Regulation

0.0000000
Voltage Limiter

0.0000000
Meter Protection

0.0000000
MCQ13
In _____ , the transistor operates somewhere between saturation and cut-off state

Linear Regulator

1.0000000
Step-down Regulator

0.0000000
Step-up Regulator

0.0000000
Inverting Regulator

0.0000000
MCQ14
An _____ amplifier can perform operations such as addition, subtraction, differentiation or integration

Operational

1.0000000
Efficient

0.0000000
Optimizing

0.0000000
Consistent

0.0000000
MCQ15
The OR gate is a Boolean mathematical equivalence of _____

Addition

1.0000000
Multiplication

0.0000000
Inversion

0.0000000
Negation

0.0000000
MCQ16
The positive feedback current is used mainly in_____

Oscillators

1.0000000
Capacitors

0.0000000
Oscilloscopes

0.0000000
Transformers

0.0000000
MCQ17
The OP AMP differentiator is basically a _____ pass filter

High

1.0000000
Low

0.0000000
Medium

0.0000000
Top

0.0000000
MCQ18
In the half wave rectifier, the output ripple frequency is _____

Twice the input frequency

1.0000000
Equal to the input frequency

0.0000000
Zero

0.0000000
Half the input frequency

0.0000000
MCQ19
Any amplifier circuit has the following parts except _____

The Electric Circuit

1.0000000
The Bias Circuit

0.0000000
The Load Circuit

0.0000000
The Coupling Circuit

0.0000000
MCQ20
A digital signal 101010 is applied to a NOT gate. what will be the output?

010101

1.0000000
010101

0.0000000
101010

0.0000000
111000

0.0000000
MCQ21
In the common emitter configuration, the output is derived from the _____?

Collector

1.0000000
Base

0.0000000
Emitter

0.0000000
Supply

0.0000000
MCQ22
Which configurations of the bipolar junction transistor (BJT) has the lowest gain?

Common Base

1.0000000
Common Emitter

0.0000000
Common Drain

0.0000000
Common Collector

0.0000000
MCQ23
___ is NOT a stage in the conversion of AC to a DC power supply.

Transformer

0.0000000
Rectifier

0.0000000
Filter

0.0000000
Thermistor

1.0000000
MCQ24
What is the output terminal of the common collector configuration of a BJT?

Collector

0.0000000
Amplifier

0.0000000
Emitter

1.0000000
Base

0.0000000
MCQ25
Which logic gate is also known as an inverter?

OR

0.0000000
NOT

1.0000000
NOR

0.0000000
NAND

0.0000000
MCQ26
Which logic gate is also known as a universal gate?

NOR

1.0000000
OR

0.0000000
NAND

0.0000000
AND

0.0000000
MCQ27
What is the output of a â€˜NOT gateâ€™ when the digital signal 110101 is applied to its input?

0 0 1 1 0 0

0.0000000
0 1 0 1 0 1

0.0000000
0 0 1 0 1 0

1.0000000
1 1 0 1 0 1

0.0000000
MCQ28
In free air operation, the thermal resistance consists of ____ and thermal resistance from core to ambient

thermal resistance from core to junction

0.0000000
Thermal resistance from free air to ambient

0.0000000
Cut-off region

0.0000000
thermal resistance from junction to case

1.0000000
MCQ29
In Boolean algebra, _____ is a table which gives the output state for all the possible input combination

Output table

0.0000000
Truth table

1.0000000
To-do-table

0.0000000
Logic table

0.0000000
MCQ30
Which of the following basic Boolean algebraic identities is NOT correct?

A + 0 = A

0.0000000
A + 1 = 1

0.0000000
A âˆ™ A = A

0.0000000
A âˆ™ 0 = 1

1.0000000
MCQ31

In the Series Derived Shunt-Fed Feedback Topology, the input is connected in _____

Series

0.0000000
Serial

0.0000000
Parallel

1.0000000
Linear

0.0000000
MCQ32
In _____ , the transistor operates somewhere between saturation and cut-off state

Linear Regulator

1.0000000
Step-down Regulator

0.0000000
Step-up Regulator

0.0000000
Inverting Regulator

0.0000000
MCQ33
In voltage divider bias, the DC bias Voltage and Current are _____

Dependent on temperature

1.0000000
Independent on temperature

0.0000000
Constant

0.0000000
Negligible

0.0000000
MCQ34
Which option is the output terminal of the common emitter configuration of a BJT?

Collector

1.0000000
Base

0.0000000
Emitter

0.0000000
Supply

0.0000000
MCQ35
The following are components of DC power supply except _____

Rectifiers

0.0000000
The Transformer

0.0000000
Half Wave Rectifier

0.0000000
Inverter

1.0000000
MCQ36
Which equation correctly represents the flow of electrons in an npn transistor?

IE = IB + IC

1.0000000
IC = IE + IB

0.0000000
I = IE + IB

0.0000000
IB = IE + IC

0.0000000
MCQ37
Which of the following configurations would you use to reduce the effect of the transistor gain on the collector current (IC) to improve system stability?

Base Bias with Collector and Emitter Feedback

0.0000000
Base Bias with Collector Feedback

1.0000000
Voltage Divider Bias

0.0000000
Base Bias

0.0000000
MCQ38
Which Transistor Hybrid parameter is approximately equal to the ratio Î” VBE/ Î” IB and the forward resistance of the BE junction?

hie

1.0000000
hre

0.0000000
hfe

0.0000000
hoe

0.0000000
MCQ39
Which of the transistor hybrid parameter is calculated using the formula Î” IC / Î” VCE?

hie

0.0000000
hre

0.0000000
hfe

0.0000000
hoe

1.0000000
MCQ40
The current ratio Î” IC / Î” IB is used to calculate which transistor hybrid parameter?

hie

0.0000000
hre

0.0000000
hfe

1.0000000
hoe

0.0000000
MCQ41
Which of the following Boolean algebraic identities is NOT equal to A?

A + A

0.0000000
A + 1

1.0000000
1 * A

0.0000000
A * A

0.0000000
MCQ42
In Boolean algebra, which of the following options is an example of distributive law?

A (B + C) = A âˆ™ B + A âˆ™ C

1.0000000
(A + B) + C = A + (B + C)

0.0000000
A + B = B + A

0.0000000
A (A + B) = A

0.0000000
MCQ43
Which of the following options is a simplification of the Boolean expression: A âˆ™ B + A âˆ™ B-

B-

0.0000000
A + B-

0.0000000
A

1.0000000
B

0.0000000
MCQ44

Consider the logic gates shown above, which of the following options is equivalent to the output Q?

A + B

0.0000000
A âˆ™ B

1.0000000
A-+B-

0.0000000
A-âˆ™B-

0.0000000
MCQ45

Consider the logic gates shown above, which of the following options is equivalent to the output Q?

A- âˆ™ B

0.0000000
A + B

0.0000000
A- + B

0.0000000
A âˆ™ B

1.0000000
MCQ46

Consider the logic gate shown above, what is the output â€˜Qâ€™ if two signals A = 0110 and B = 0011 are fed to the input.

Q = 1 1 0 1

1.0000000
Q = 1 1 0 1

0.0000000
Q = 0 0 1 1

0.0000000
Q = 0 1 0 1

0.0000000
MCQ47
Which of the following options is NOT true about the common base configuration of a Bipolar Junction Transistor?

Current gain is always less than 1

0.0000000
Current gain is equal to ICIE

0.0000000
Preferred choice for current amplification

1.0000000
Has high output resistance

0.0000000
MCQ48
Which of the following materials is often used for the construction of heat sinks due to its light weight and low resistivity?

Aluminium

1.0000000
Copper

0.0000000
Zinc

0.0000000
Iron

0.0000000
MCQ49
Using Boolean algebra, ___ expression is equivalent to:

A âˆ™ B + A (CD + CD-)

A â^™ B + D-

0.0000000
A (B + C)

1.0000000
A (B + D)

0.0000000
A (B + D-)

0.0000000
MCQ50
Which of the following expressions is equivalent to (A + B) â^™ (A + C) after simplifying using Boolean algebra ?

A + (B â^™ C)

1.0000000
A + B + C

0.0000000
A â^™ (B + C)

0.0000000
A â^™ (A + C)

0.0000000