

Osmania University Common Entrance Test

Notations :

- Options shown in green color and with ✓ icon are correct.
- Options shown in red color and with ✗ icon are incorrect.

Question Paper Name:	MSc Electronics 5th June 2018 Shift2
Subject Name:	M.Sc. Electronics
Creation Date:	2018-06-06 15:20:39
Duration:	90
Total Marks:	100
Display Marks:	No
Calculator:	None
Magnifying Glass Required?:	No
Ruler Required?:	No
Eraser Required?:	No
Scratch Pad Required?:	No
Rough Sketch/Notepad Required?:	No
Protractor Required?:	No

MSc Electronics

Group Number :	1
Group Id :	35918182
Group Maximum Duration :	0
Group Minimum Duration :	90
Revisit allowed for view? :	No
Revisit allowed for edit? :	No
Break time:	0
Group Marks:	100

PART A

Section Id :	359181174
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	40
Number of Questions to be attempted:	40
Section Marks:	40
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	359181178
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 3591817678 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which number system has a base of 16?

Options :

1. ✘ Decimal
2. ✘ Octal
3. ✔ Hexadecimal
4. ✘ None of the options

Question Number : 2 Question Id : 3591817679 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which logic family provide minimum power dissipation?

Options :

1. ✘ TTL
2. ✔ CMOS
3. ✘ ECL
4. ✘ JFET

Question Number : 3 Question Id : 3591817680 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

$A.\bar{A}$ is equal to

Options :

1. ✘ A
2. ✘ infinity
3. ✔ 0
4. ✘ 1

Question Number : 4 Question Id : 3591817681 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which of the following logic circuits is the fastest?

Options :

1. ✖ RTL
2. ✖ DTL
3. ✔ TTL
4. ✖ All the Options

Question Number : 5 Question Id : 3591817682 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

A full adder has

Options :

1. ✖ 2 inputs, 2 outputs
2. ✔ 3 inputs, 2 outputs
3. ✖ 2 inputs, 1 output
4. ✖ 3 inputs, 1 output

Question Number : 6 Question Id : 3591817683 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

An n variable K-map can have

Options :

1. ✖ n^2 cells
2. ✔ 2^n cells
3. ✖ n^n cells

4. ✘ $n2^n$ cells

Question Number : 7 Question Id : 3591817684 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Each term in the standard SOP form is called a

Options :

1. ✘ maxterm

2. ✔ minterm

3. ✘ don't care

4. ✘ literal

Question Number : 8 Question Id : 3591817685 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Minimization of logical expressions while designing digital systems helps in reducing

Options :

1. ✘ cost

2. ✘ space requirements

3. ✘ power requirements

4. ✔ All the Options

Question Number : 9 Question Id : 3591817686 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The binary number designations of the rows and columns of the K-map are in

Options :

1. ✘ Binary code

2. ✘ BCD code

3. ☒ Gray code

4. ☐ XS-3 code

Question Number : 10 Question Id : 3591817687 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

The Boolean algebra is mostly based on

Options :

1. ☐ Boolean theorem

2. ☒ De Morgan's theorem

3. ☐ De Moran's theorem

4. ☐ Standard theorem

Question Number : 11 Question Id : 3591817688 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

2's complement of 10101011 is

Options :

1. ☒ 01010101

2. ☐ 00110011

3. ☐ 11001100

4. ☐ 10100011

Question Number : 12 Question Id : 3591817689 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

In an SR latch built from NOR gates, which condition is not allowed

Options :

1. ☐ S=0, R=0

2. ☐ S=0, R=1

3. ✖ S=1, R=0

4. ✔ S=1, R=1

Question Number : 13 Question Id : 3591817690 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

A D-flip-flop is said to be transparent when

Options :

1. ✖ The output is Low

2. ✔ The output follow input

3. ✖ The output is high

4. ✖ The output follows clock

Question Number : 14 Question Id : 3591817691 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In the toggle mode a JK flip-flop has

Options :

1. ✖ J=0: K=0

2. ✖ J=0: K=1

3. ✔ J=1: K=1

4. ✖ J=1: K=0

Question Number : 15 Question Id : 3591817692 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

A digital circuit that can store one bit is known as

Options :

1. ✔ flip-flop

2. ✖ XOR gate

3. ✖ register

4. ✖ latch

Question Number : 16 Question Id : 3591817693 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

A Multiplexer is

Options :

1. ✖ 1 to N

2. ✖ N to N

3. ✔ N to 1

4. ✖ All the Options

Question Number : 17 Question Id : 3591817694 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Master-slave flip flop consists of _____ flip-flops

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 18 Question Id : 3591817695 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Full form of EEPROM is

Options :

1. ✖ Erasable Electrically Programmable Read Only Memory
2. ✖ Erasable Electrically Programming Read Only Memory
3. ✔ Electrically Erasable Programmable Read Only Memory
4. ✖ Electrically Enabled Programmable Read Only Memory

Question Number : 19 Question Id : 3591817696 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

A counter circuit is usually constructed of

Options :

1. ✖ A number of latches connected in cascade form
2. ✖ A number of NAND gates connected in cascade form
3. ✔ A number of flip-flops connected in cascade
4. ✖ None

Question Number : 20 Question Id : 3591817697 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In decade counter the output goes into reset state after counting how many number of pulses

Options :

1. ✖ 9
2. ✖ 8
3. ✖ 11
4. ✔ 10

Question Number : 21 Question Id : 3591817698 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

What type of register would have a complete binary number shifted in one bit at a time and have all the stored bits shifted out one at a time?

Options :

1. ✓ Parallel-in Parallel-out

2. ✗ Parallel-in Serial-out

3. ✗ Serial-in Parallel-out

4. ✗ Serial-in Serial-out

Question Number : 22 Question Id : 3591817699 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which one of the following IC is used to interface keyboard and display?

Options :

1. ✗ 8251

2. ✗ 8255

3. ✓ 8279

4. ✗ 8253

Question Number : 23 Question Id : 3591817700 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The first operation performed in INTEL 8085 microprocessor after RESET is

Options :

1. ✓ Memory read from the location 0000H

2. ✗ instruction fetch from 0000H

3. ✗ Instruction fetch from location 8000H

4. ✗ stack initialization

Question Number : 24 Question Id : 3591817701 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

When any data transfer instruction, for transfer the data from memory to microprocessor, is executed the condition flags are

Options :

1. ✓ not affected

2. ✗ always set

3. ✗ always reset

4. ✗ none

Question Number : 25 Question Id : 3591817702 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which instruction is required to rotate the content of accumulator one bit right along with carry?

Options :

1. ✗ RRC

2. ✗ RLC

3. ✓ RAR

4. ✗ RAC

Question Number : 26 Question Id : 3591817703 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Basic steps of execution of an instruction in a microprocessor

Options :

1. ✓ fetch → decode → execute

2. ✗ execute → fetch → decode

3. ✗ decode → fetch → execute

4. ✗ f etch → execute → decode

Question Number : 27 Question Id : 3591817704 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The number of output pins in 8085 microprocessors are

Options :

1. ✖ 40

2. ✔ 27

3. ✖ 18

4. ✖ 16

Question Number : 28 Question Id : 3591817705 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Consider the following statements: In 8085 microprocessor, data-bus and address bus are multiplexed in order to

I) Increase the speed of microprocessor.

II) Reduce the number of pins.

III) Connect more peripheral chips.

Which of these statements is/are correct?

Options :

1. ✖ I only

2. ✖ I & II only

3. ✔ II only

4. ✖ II & III only

Question Number : 29 Question Id : 3591817706 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which is the microprocessor comprises:

Options :

1. ✖ Register section

2. ✖ One or more ALU

3. ✖ Control unit

4. All the Options

Question Number : 30 Question Id : 3591817707 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The register AX is formed by grouping

Options :

1.  AH & AL

2.  BH & AL

3.  AH & BL

4.  CH & CL

Question Number : 31 Question Id : 3591817708 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The 8085 microprocessor uses a crystal of frequency 6.25 MHz. The T-state value is

Options :

1.  320 ns

2.  640 ns

3.  960 ns

4.  1280 ns

Question Number : 32 Question Id : 3591817709 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

How many 16-bit special purpose registers are present in 8085 microprocessor?

Options :

1.  4

2.  6

3. ✖ 8

4. ✔ 2

Question Number : 33 Question Id : 3591817710 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The number of hardware interrupts present in 8085 microprocessor are

Options :

1. ✖ 3

2. ✔ 5

3. ✖ 7

4. ✖ 9

Question Number : 34 Question Id : 3591817711 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

A number of 1-bit registers used in microprocessors to indicate certain conditions are usually referred to as

Options :

1. ✔ FLAGS

2. ✖ Shift Register

3. ✖ Latches

4. ✖ Counters

Question Number : 35 Question Id : 3591817712 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Let the content of register C be 00000000 before the instruction DCR C is executed. The content of register C after the execution of this instruction will be

Options :

1. ✖ 00000001

2. ✔ 11111111

3. ✖ 0101010

4. ✖ None

Question Number : 36 Question Id : 3591817713 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

A single instruction to clear the lower nibble of accumulator in 8085 language assembly is

Options :

1. ✖ XRI OFH

2. ✔ ANI FOH

3. ✖ ANI OFH

4. ✖ XRI FOH

Question Number : 37 Question Id : 3591817714 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The Value of LSB and MSB for an 8-bit DAC for the 0 to 10V range are

Options :

1. ✖ 29 mV & 9.1 V

2. ✖ 39 mV & 9.9V

3. ✔ 39 mV & 5 V

4. ✖ 0V & 10 V

Question Number : 38 Question Id : 3591817715 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The 8155 Memory chip contains

Options :

1. ✔ 256 X 8 Static RAM

2. ✖ 512 X 8 Dynamic RAM

3. ✖ 1024 x 8 Static RAM

4. ✖ 128 x 8 Dynamic RAM

Question Number : 39 Question Id : 3591817716 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Assuming LSB is at position 0 and MSB at position 7, which bit positions are not used (Undefined) in flag register of an 8085 microprocessor?

Options :

1. ✖ 2, 4, 5

2. ✔ 1, 3, 5

3. ✖ 3, 5, 7

4. ✖ 1, 2, 3

Question Number : 40 Question Id : 3591817717 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Total no. of instruction for 8085 microprocessor assembly language is

Options :

1. ✖ 244

2. ✔ 246

3. ✖ 256

4. ✖ 235

PART B

Section Id :	359181175
Section Number :	2
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	60
Number of Questions to be attempted:	60

Section Marks:	60
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	359181179
Question Shuffling Allowed :	Yes

Question Number : 41 Question Id : 3591817718 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

The imaginary part of admittance is known as

Options :

1. ✖ Impedance
2. ✖ Conductance
3. ✔ Susceptance
4. ✖ Resistance

Question Number : 42 Question Id : 3591817719 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

Kirchhoff's voltage law is based on the principle of

Options :

1. ✔ Law of conservation of Energy
2. ✖ Law of conservation of momentum
3. ✖ Law of conservation of charge
4. ✖ Law of conservation of mass

Question Number : 43 Question Id : 3591817720 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

Typically Oscilloscope represents:

Options :

1. ✖ Current and time

2. ✖ Resistance and time

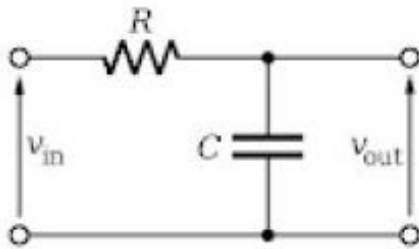
3. ✔ Voltage and time

4. ✖ Power and time

Question Number : 44 Question Id : 3591817721 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The RC circuit shown here will act as



Options :

1. ✔ Low pass filter

2. ✖ high pass filter

3. ✖ band pass filter

4. ✖ band rejection filter

Question Number : 45 Question Id : 3591817722 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The reverse current in a p-n junction diode doubles approximately

Options :

1. ✖ for every 20°C rise of temperature

2. ✔ for every 10°C rise of temperature

3. ✖ for every 30°C rise of temperature

4. ✖ for every 40°C rise of temperature

Question Number : 46 Question Id : 3591817723 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which of the following expressions represents the trans conductance of a bipolar transistor

Options :

1. ✗ I_C / I_B
2. ✓ dI_C / dV_{BE}
3. ✗ dI_C / dI_B
4. ✗ none

Question Number : 47 Question Id : 3591817724 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In a JFET, I_{DSS} is known as

Options :

1. ✗ drain to source current
2. ✓ drain to source current with gate shorted
3. ✗ drain to source current with gate open
4. ✗ none

Question Number : 48 Question Id : 3591817725 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

An SCR is a triggered device

Options :

1. ✗ Voltage
2. ✓ Current
3. ✗ Voltage as well as current
4. ✗ None

Correct : 1 Wrong : 0

The efficiency of a LED for generating light is directly proportional to

Options :

1. ✖ Temperature
2. ✖ doping level
3. ✖ applied voltage
4. ✔ current injected

Correct : 1 Wrong : 0

Barkhausen's criteria is

Options :

1. ✔ Positive feedback, $A\beta = 1$, $\theta = 0$ or multiple 360°
2. ✖ Negative feedback, $A\beta = 1$, $\theta = 0$ or multiple 360°
3. ✖ Positive feedback, $A\beta = 0$, $\theta = 0$ or multiple 360°
4. ✖ Negative feedback, $A\beta = 1$, $\theta = 180^\circ$

Correct : 1 Wrong : 0

For an Op-amp with negative feedback, the output is

Options :

1. ✖ Equal to the input
2. ✖ increased
3. ✔ Fed back to the inverting input
4. ✖ fed back to the noninverting input

Question Number : 52 Question Id : 3591817729 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The characteristic of an ideal op-amp

Options :

1. ✘ Infinite gain
2. ✘ Infinite bandwidth
3. ✘ Infinite in input impedance
4. ✔ All the Options

Question Number : 53 Question Id : 3591817730 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In Amplitude Modulation the Bandwidth required is

Options :

1. ✘ Equal to the frequency of modulating signal
2. ✔ Twice to the frequency of modulating signal
3. ✘ four times to the frequency of modulating signal
4. ✘ eight times to the frequency of modulating signal

Question Number : 54 Question Id : 3591817731 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

For an op-amp having differential gain A_v and common-mode gain A_c the CMRR is given by

Options :

1. ✘ $A_v + A_c$
2. ✔ A_v / A_c
3. ✘ $1 + A_v / A_c$
4. ✘ A_c / A_v

Question Number : 55 Question Id : 3591817732 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

RC coupling is used for Amplification

Options :

1. ☒ Voltage

2. ☐ Current

3. ☐ Power

4. ☐ None

Question Number : 56 Question Id : 3591817733 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Ripple factor of ideal rectifier is

Options :

1. ☐ 1

2. ☐ 0

3. ☒ infinity

4. ☐ none

Question Number : 57 Question Id : 3591817734 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The maximum efficiency of half wave rectifier is

Options :

1. ☐ 52.4%

2. ☒ 40.6%

3. ☐ 67.5%

4. ☐ 22.45%

Question Number : 58 Question Id : 3591817735 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which of the following statement is wrong for photodiode:

Options :

1. ✖ It is a reverse biased P-N Junction
2. ✖ Higher the illumination, greater the reverse current
3. ✔ The current is mainly due to flow of majority carriers
4. ✖ It has a dark current which flow when no light is incident.

Question Number : 59 Question Id : 3591817736 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

A MOSFET can be operated with

Options :

1. ✖ Negative gate voltage only
2. ✖ positive gate voltage only
3. ✔ Positive as well as negative gate voltage
4. ✖ none

Question Number : 60 Question Id : 3591817737 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In most of the transistors, the collector region is made physically large than the emitter region

Options :

1. ✖ to collect more charge carriers
2. ✖ to reduce resistance in the path of flow of electrons
3. ✖ to increase collector current
4. ✔ for dissipating heat

Question Number : 61 Question Id : 3591817738 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The resonant frequency of the series LCR circuit having $L=33\text{mH}$, $C=15\mu\text{F}$ and $R=22\Omega$

Options :

1. ✗ 53 Hz
2. ✗ 128 Hz
3. ✓ 226 Hz
4. ✗ 1421 Hz

Question Number : 62 Question Id : 3591817739 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Find the correct answer related to the tunnel diode

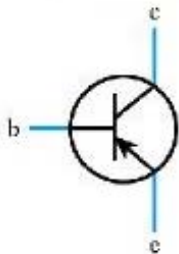
Options :

1. ✗ Exhibits negative resistance region
2. ✗ Small capacitance and small inductance
3. ✗ Tunneling mechanism takes place almost at the speed of light
4. ✓ All the Options

Question Number : 63 Question Id : 3591817740 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

What kind of device does the following symbol represent?



Options :

1. ✗ *n-channel* JFET
2. ✗ *p-channel* JFET
3. ✗ *npn* bipolar transistor

4. ☒ *pnp* bipolar transistor

Question Number : 64 Question Id : 3591817741 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The power supply which converts dc into ac or dc is known as

Options :

1. ☐ bridge rectifier

2. ☐ inverter

3. ☐ linear power supply

4. ☒ SMPS

Question Number : 65 Question Id : 3591817742 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

What is the effect of negative feedback on the gain of an amplifier?

Options :

1. ☐ It reduces the gain by a factor of $1/B$

2. ☐ It increases the gain by a factor of $(1 + AB)$

3. ☒ It reduces the gain by a factor of $(1 + AB)$

4. ☐ It increases the gain by a factor of $1/B$

Question Number : 66 Question Id : 3591817743 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The modulation index of an AM wave changes from 0 to 1. The transmitted power is

Options :

1. ☐ unchanged

2. ☐ half

3. ☐ doubled

4. ☒ increases by 50 percent

Question Number : 67 Question Id : 3591817744 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

An astable multivibrator is also known as a:

Options :

- 1. ☐ one-shot multivibrator
- 2. ☒ free-running multivibrator
- 3. ☐ bistable multivibrator
- 4. ☐ monostable multivibrator

Question Number : 68 Question Id : 3591817745 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The input stage of an Op-amp is usually a

Options :

- 1. ☒ differential amplifier
- 2. ☐ class B push-pull amplifier
- 3. ☐ CE amplifier
- 4. ☐ swamped amplifier

Question Number : 69 Question Id : 3591817746 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

SCR is a

Options :

- 1. ☐ 5 layer 3 junction device
- 2. ☐ 2 layer 1 junction device
- 3. ☒ 4 layer 3 junction device
- 4. ☐ 4 layer 2 junction device

Question Number : 70 Question Id : 3591817747 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Lissajous figure is used in CRO for

Options :

1. ✗ Phase measurement
2. ✗ Frequency measurement
3. ✗ Amplitude measurement
4. ✓ Phase measurement & Frequency measurement

Question Number : 71 Question Id : 3591817748 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The complex impedance of $150 + j200 \Omega$ into a polar form is given by

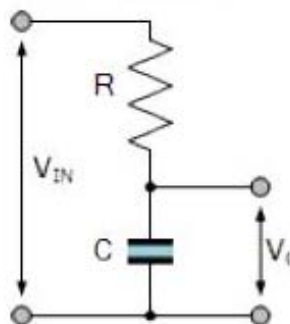
Options :

1. ✗ $|Z| = 275; \angle = 30^\circ$
2. ✓ $|Z| = 250; \angle = 53^\circ$
3. ✗ $|Z| = 150; \angle = 60^\circ$
4. ✗ $|Z| = 350; \angle = 47^\circ$

Question Number : 72 Question Id : 3591817749 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The RC circuit shown here will act as



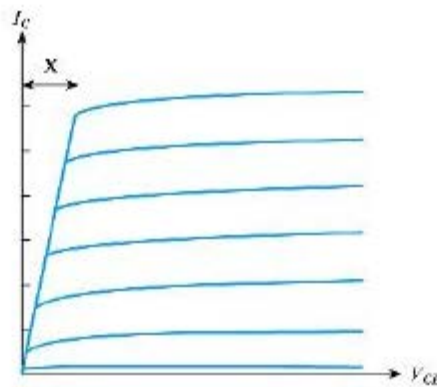
Options :

1. ✓ integrator
2. ✗ differentiator
3. ✗ Phase shifter
4. ✗ none

Question Number : 73 Question Id : 3591817750 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In the bipolar transistor output characteristics shown below, what region is represented by the symbol 'X'?



Options :

1. ✓ The saturation region
2. ✗ The space-charge region
3. ✗ The ohmic region
4. ✗ The active region

Question Number : 74 Question Id : 3591817751 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

When a UJT is turned on the resistance between emitter terminal and base 1 is

Options :

1. ✗ increased
2. ✗ decreased

3. ✖ zero

4. ✔ infinite

Question Number : 75 Question Id : 3591817752 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

78XX series are three terminal

Options :

1. ✔ Positive fixed voltage regulators

2. ✖ positive variable voltage regulators

3. ✖ Negative variable voltage regulators

4. ✖ negative fixed voltage regulators

Question Number : 76 Question Id : 3591817753 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

In an RC coupled amplifier, the voltage gain over mid-frequency range

.....

Options :

1. ✖ Changes abruptly with frequency

2. ✔ is constant

3. ✖ Changes uniformly with frequency

4. ✖ none

Question Number : 77 Question Id : 3591817754 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

The Op-amp can amplify

Options :

1. ✖ AC signals only

- 2. ✖ DC signals only
- 3. ✔ both AC. and DC signals
- 4. ✖ neither DC nor AC signals

Question Number : 78 Question Id : 3591817755 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The output of the astable circuit

Options :

- 1. ✖ is LOW until a trigger is received
- 2. ✖ is HIGH until a trigger is received
- 3. ✖ floats until triggered
- 4. ✔ constantly switches between two states

Question Number : 79 Question Id : 3591817756 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In Wien Bridge Oscillator

Options :

- 1. ✔
the output of the operational amplifier is fed back to both the inputs of the amplifier
- 2. ✖
the output of the operational amplifier is fed back to inverting input of the amplifier
- 3. ✖
the output of the operational amplifier is fed back to non-inverting input of the amplifier
- 4. ✖ None

Question Number : 80 Question Id : 3591817757 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which of the following pulse modulation is analog

Options :

1. ✗ PCM
2. ✗ Differential PCM
3. ✓ PWM
4. ✗ Delta

Question Number : 81 Question Id : 3591817758 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

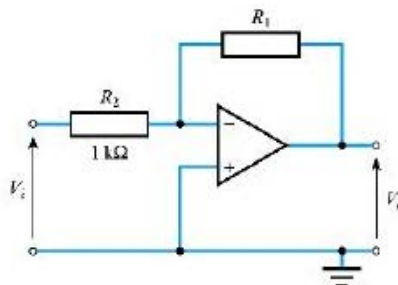
The voltage follower has a

Options :

1. ✗ small open-loop voltage gain
2. ✗ closed-loop bandwidth of zero
3. ✗ large closed-loop output impedance
4. ✓ closed-loop voltage gain of unity

Question Number : 82 Question Id : 3591817759 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

In the following circuit, what value of R_1 is required to give a voltage gain of -50?



Options :

1. ✗ 51kohm
2. ✗ 61kohm

3. ✓ 50kohm

4. ✗ 25kohm

Question Number : 83 Question Id : 3591817760 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Photo transistor contains

Options :

1. ✗ Small base and large collector

2. ✗ small base and small collector

3. ✗ Large base and small collector

4. ✓ Larger base and larger collector

Question Number : 84 Question Id : 3591817761 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The major advantage of FM over AM is

Options :

1. ✓ Reception is less noisy

2. ✗ Higher carrier frequency

3. ✗ Smaller bandwidth

4. ✗ Small frequency deviation

Question Number : 85 Question Id : 3591817762 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In the emitter characteristics of UJT the negative resistance portion

Options :

1. ✗ Lies in the cutoff region

2. ✗ continues up to peak point

3. ✓ Lasts until the valley point is reached

4. ✗ does not exist

Question Number : 86 Question Id : 3591817763 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In a AC circuit, containing resistance and inductance the voltage across inductance

Options :

1. ✓ leads the current by 90° phase

2. ✗ lags the current by 90° phase

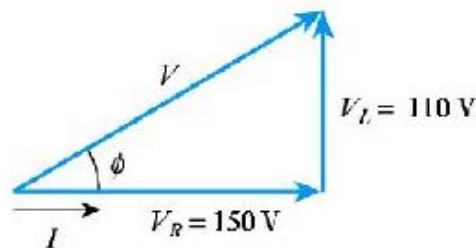
3. ✗ leads the current by 180° phase

4. ✗ lags the current by 180° phase

Question Number : 87 Question Id : 3591817764 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The diagram below shows a phasor representation of the voltage V across a combination of a resistor and an inductor. The magnitude and phase of the voltage V are given by



Options :

1. ✗ The magnitude is 168 V and the phase angle is 36°

2. ✗ The magnitude is 168 V and the phase angle is 54°

3. ✗ The magnitude is 186 V and the phase angle is 54°

4. ✓ The magnitude is 186 V and the phase angle is 36°

Question Number : 88 Question Id : 3591817765 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The capacitance of a reverse biased p-n junction

Options :

1. ☒ decreases with increasing reverse bias
2. ☐ increases with increasing reverse bias
3. ☐ depends on reverse saturation current
4. ☐ none

Question Number : 89 Question Id : 3591817766 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The input control parameter of a JFET is

Options :

1. ☐ Gate current
2. ☐ Source voltage
3. ☐ Drain voltage
4. ☒ Gate voltage

Question Number : 90 Question Id : 3591817767 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

When superhetrodyne receiver is used instead of tuned radiofrequency receiver

Options :

1. ☐ The problem of instability is solved
2. ☐ The problem of insufficient adjacent-frequency is rejection is solved
3. ☐ The problem of bandwidth variation can be solved
4. ☒ All the Options

Question Number : 91 Question Id : 3591817768 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

Which of the following statement related to network analysis is true

Options :

1. 

node method is based on node voltage and mesh method is based on mesh currents

2. 

node method is based on node currents and mesh method is based on mesh currents

3. 

node method is based on node currents and mesh method is based on mesh voltage

4. 

node method is based on node voltage and mesh method is based on mesh voltages

Question Number : 92 Question Id : 3591817769 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

"Any number of current sources in parallel may be replaced by a single current source whose current is the algebraic sum of individual source currents and source resistance is the parallel combination of individual source resistances". The above statement is associated with

Options :

1.  The venin's theorem

2.  Mill man's theorem

3.  Maximum power transfer theorem

4.  Norton's theorem

Question Number : 93 Question Id : 3591817770 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

When drain voltage equals the pinch-off-voltage, then drain current with the increase in drain voltage

Options :

1.  decreases

- 2. ✖ increases
- 3. ✔ remains constant
- 4. ✖ none

Question Number : 94 Question Id : 3591817771 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

The theoretical bandwidth required for frequency modulation is

Options :

- 1. ✔ infinity
- 2. ✖ 32 times the modulating signal
- 3. ✖ 16 times the modulating signal
- 4. ✖ 64 times the modulating signal

Question Number : 95 Question Id : 3591817772 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

The normal way to turn on a SCR is by

Options :

- 1. ✖ Break over voltage
- 2. ✖ Appropriate anode current
- 3. ✔ Appropriate gate current
- 4. ✖ None

Question Number : 96 Question Id : 3591817773 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

The parallel resonant circuit is also called as

Options :

- 1. ✖ Acceptor

- 2. ☒ Rejector
- 3. ☐ Modulator
- 4. ☐ Receiver

Question Number : 97 Question Id : 3591817774 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

For $\alpha = 0.985$ the approximate value of β is

Options :

- 1. ☐ 49
- 2. ☐ 76
- 3. ☐ 86
- 4. ☒ 66

Question Number : 98 Question Id : 3591817775 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

If the operating of a transistor changes, the h parameters

Options :

- 1. ☐ Do not change
- 2. ☒ also change
- 3. ☐ may or may not change
- 4. ☐ none

Question Number : 99 Question Id : 3591817776 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

The most commonly used arrangement in BJT is _____

Options :

- 1. ☐ CB

2. ✖ CC

3. ✖ EC

4. ✔ CE

Question Number : 100 Question Id : 3591817777 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct : 1 Wrong : 0

In astable mode of operation of the 555 timer the capacitor charges and discharges between

Options :

1. ✖ $\frac{2}{3} V_{CC}$ and $\frac{4}{3} V_{CC}$

2. ✔ $\frac{1}{3} V_{CC}$ and $\frac{2}{3} V_{CC}$

3. ✖ $\frac{1}{2} V_{CC}$ and $\frac{3}{2} V_{CC}$

4. ✖ $\frac{4}{3} V_{CC}$ and $\frac{2}{3} V_{CC}$