

18EES101J - CT-3 (02/08/2021; 09:00 am - 10:30 am)

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Part-A

30 X 1 = 30 MARKS

1's complement of 1011101 is _____

- ☐ 0101110
- ☐ 1001101
- ☒ 0100010
- ☐ 1100101

Clear selection

Which of the following represent an active transducer?

- ☐ Strain gauge
- ☐ Thermistor
- ☐ LVDT
- ☒ Thermocouple

Clear selection



Which transducer is known as a self-generating transducer?

- ☒ Active transducer
- ☐ Passive transducer
- ☐ Secondary transducer
- ☐ Analog transducer

Clear selection

Capacitive transduction involves

- ☐ change in resistance
- ☐ change in inductance
- ☒ change in capacitance
- ☐ change in conductance

Clear selection

The transducers that convert the input signal into the output signal, which is continuous function of time, are known as

- ☒ Analog
- ☐ Digital
- ☐ Active
- ☐ Passive

Clear selection



FM can be generated using PM by _____ .

- ☒ Passing the modulating signal through a low pass filter
- ☐ Passing the modulating signal through a high pass filter
- ☐ Using the pre-emphasis
- ☐ Using the de-emphasis

Clear selection

If at one end, the two wires made of different metals are joined together then a voltage will get produced between the two wires due to difference of temp between the two ends of wires. This effect is observed in

- ☒ Thermocouples
- ☐ Thermistors
- ☐ RTD
- ☐ Ultrasonics

Clear selection

2's complement of 11001011 is _____

- ☐ 01010111
- ☐ 11010100
- ☒ 00110101
- ☐ 11100010

Clear selection



The linear variable differential transformer transducer is

- ☒ Inductive transducer
- ☐ Non-inductive transducer
- ☐ Capacitive transducer
- ☐ Resistive transducer

Clear selection

Strain gauge is a

- ☐ Active device and converts mechanical displacement into a change of resistance
- ☐ Passive device and converts electrical displacement into a change of resistance
- ☒ Passive device and converts mechanical displacement into a change of resistance
- ☐ Active device and converts electrical displacement into a change of resistance

Clear selection

Any signed negative binary number is recognized by its _____

- ☒ MSB
- ☐ LSB
- ☐ Byte
- ☐ Nibble

Clear selection



In amplitude modulation, bandwidth is _____ the audio signal frequency

- ☐ Thrice
- ☐ Four times
- ☒ Twice
- ☐ Equal to

Clear selection

Potentiometer transducers are used for the measurement of

- ☐ Pressure
- ☒ Displacement
- ☐ Humidity
- ☐ Both Pressure and Displacement

Clear selection

A quartz crystal is

- ☐ a chemical transducer
- ☐ a photoelectric transducer
- ☐ not a self-generating transducer
- ☒ a self-generating transducer

Clear selection



The greatest negative number which can be stored is 8 bit computer using 2's complement arithmetic is

- ☐ -256
- ☒ -128
- ☐ -255
- ☐ -127

Clear selection

Which of the following is not a characteristic of ideal transducer?

- ☐ High dynamic range
- ☒ Low linearity
- ☐ High repeatability
- ☐ Low noise

Clear selection

The inverter is

- ☒ NOT gate
- ☐ OR gate
- ☐ AND gate
- ☐ XOR gate

Clear selection



Binary addition of 0110 and 0011 is

- ☐ 0011
- ☒ 1001
- ☐ 1011
- ☐ 1100

Clear selection

What is the line connecting the positive and negative peaks of the carrier waveform called?

- ☐ Peak line
- ☐ Maximum amplitude ceiling
- ☐ Modulation index
- ☒ Envelope

Clear selection

The universal gate is

- ☒ NAND gate
- ☐ OR gate
- ☐ AND gate
- ☐ XOR gate

Clear selection



A transducer converting ground movement or velocity to voltage is known as

- ☒ Geophone
- ☐ Pickup
- ☐ Hydrophone
- ☐ Sonar transponder

Clear selection

The power needs of electrical transducers are

- ☐ Maximum
- ☒ Minimum
- ☐ Zero
- ☐ infinite

Clear selection

The ratio between the modulating signal voltage and the carrier voltage is called?

- ☐ Amplitude modulation
- ☐ Modulation frequency
- ☒ Modulation index
- ☐ Ratio of modulation

Clear selection



DeMorgan's Law states that

- ☐ $(A+B)' = A'*B$
- ☒ $(AB)' = A' + B'$
- ☐ $(AB)' = A' + B$
- ☐ $(AB)' = A + B$

Clear selection

An inductive transducer measures the variation in

- ☐ reluctance
- ☐ resistance
- ☐ capacitance
- ☒ self-inductance

Clear selection

Thermoelectric transducer is a

- ☒ temperature transducer
- ☐ pressure transducer
- ☐ inductive transducer
- ☐ capacitive transducer

Clear selection



With the increase in the intensity of light, the resistance of a photovoltaic cell

- ☐ Increases linearly
- ☒ Decreases
- ☐ Remains same
- ☐ Increases exponentially

Clear selection

Maxterm designation for $A + B + C$ is

- ☒ M0
- ☐ M1
- ☐ M3
- ☐ M4

Clear selection

The largest two digit hexadecimal number is _____

- ☐ (FE)₁₆
- ☐ (FD)₁₆
- ☒ (FF)₁₆
- ☐ (EF)₁₆

Clear selection



The NOR gate is OR gate followed by

- ☐ AND gate
- ☐ NAND gate
- ☒ NOT gate
- ☐ XNOR gate

Clear selection

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