

1- (جای خالی را با گزینه مناسب پر کنید و یا گزینه هم معنی با کلمه ای که زیر آن خط کشیده شده را انتخاب کنید)

Choose the correct answer

At the condensing stage a large quantity of heat has to be the system.

1. extracted from 2. exited 3. condensed to 4. turned into

2-Electrical energy flows through a that determines the billing for the customer.

1. sectionalizing fuse 2. metering device
3. surge arrester 4. secondary mains

3-At the transformer, the voltage of the energy being delivered is reduced to the voltage values from higher primary line voltages

1. utilization 2. insulation 3. overload 4. overdrive

4-The transformer is protected from overloads and faults by fuses or so-called weak links on the high-voltage side; the latter also usually include circuit-breaking devices. Here “the latter” refers to.....

1. the transformer 2. overload 3. fuses 4. weak links

5-If the transformer is situated on an system, it is also protected from lightning or line voltage surges by a surge arrester.

1. overdrive 2. overload 3. overestimated 4. overhead

6-Voltage regulators and capacitors are installed at strategic points on primary circuits as which help in holding down energy in the conductors.

1. construction 2. distribution 3. heating 4. losses

7-All power stations depend on two fundamental factors: a flow of water and a difference in level or head.

1. coal-fired 2. oil-fired 3. hydroelectric 4. electromagnetic

8-A solar cell light energy into an electrical signal.

1. converts 2. inverts 3. diverts 4. inserts

9-The package of a transistor can serve as a heat sink to away any heat generated by the transistor.

1. connect 2. conduct 3. concern 4. combine

10-In a closed-loop control system, the actuating error signal to the controller.

- 1. feeds
- 2. fed
- 3. is fed
- 4. feeding

11-To ensure maximum, the system must possess a high degree of electricity.

- 1. protected- protection
- 2. protective - protection
- 3. protective - protected
- 4. protection - protective

12-Transistors having packages, are usually inserted and soldered into holes in printed circuit boards (PCBs).

- 1. through-hole
- 2. surface mount
- 3. metal can
- 4. soldered

13-The transmitting antenna converts its input electrical energy into electromagnetic energy. The antenna can thus be thought of as a

- 1. transponder
- 2. transmitter
- 3. transceiver
- 4. transducer

14-The noise originating from the sun is termed noise

- 1. solar
- 2. cosmic
- 3. thermal
- 4. shot

15-In the design of control systems, it is practical to first design the controller based on the linear-system model by neglecting the of the system.

- 1. linear
- 2. linearity
- 3. nonlinear
- 4. nonlinearities

16-To properly manage information, electronic devices must be able to retrieve information.

- 1. overwrite
- 2. copy and paste
- 3. erase
- 4. find and bring back

17-The electronic signal produced by the microphone is an analog to the speech signal. The word analog means:

- 1. familiar
- 2. proportional
- 3. similar
- 4. corresponding

18-The two fluids are allowed to come into contact and, as a consequence, some of the water is lost by evaporation.

- 1. mixture
- 2. construction
- 3. result
- 4. residual

19-The three-phase mains emanate from a distribution substation, supplied from a bus in that station.

- 1. originate
- 2. distribute
- 3. prolong
- 4. refer

20-The diode is generally mounted in one of the three basic packages.

1. maintained

2. imitated

3. inserted

4. installed

1	الف
2	ب
3	الف
4	د
5	د
6	د
7	ج
8	الف
9	ب
10	ج
11	د
12	الف
13	د
14	الف
15	د
16	د
17	ج
18	ج
19	الف
20	د

1-Which one defines best the word “electronics”?

1. the branch of science and technology that manages the flow of power
2. the branch of science and technology that deals with the controlling the flow of information
3. Electronics deals with digital circuits.
4. the branch of science and technology that deals with semiconductors

2-The basic job(s) of the electrical devices is(are):

1. Distributing electrical power
2. Managing the flow of power and information
3. Generating, distributing and converting electrical power
4. Distributing and protection of electricity

3-All electrical circuits have the following elements:

1. Source of voltage, protection devices, load, control and ground
2. Switches, wires, protection devices, light and power
3. Switches, control buttons, display
4. 2 and 3

4-Basic types of circuits are:

- | | |
|-------------------------------|--------------------------------------|
| 1. Series and parallel | 2. Active and passive circuits |
| 3. Power and control circuits | 4. Series, parallel, series-parallel |

5-Which of the followings defines KCL?

1. The sum of the voltage drops around any loop is zero.
2. The sum of the currents into any node of a circuit is zero.
3. The current through a series of elements is the same.
4. The sum of the current drops around any loop is zero.

6-Basic linear analog circuit components are:

1. Resistor, capacitor, and inductor
2. Switches, active components, passive components
3. Resistor, capacitor, inductor, transformer
4. 2 and 3

7-Ideal current meters and voltmeters should have:

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|------------------------|---|
| 1. Zero resistance | 2. Zero and infinite resistance, respectively |
| 3. Infinite resistance | 4. Infinite and zero resistance, respectively |

8-The word “denary” in “a digital meter presents the value of an input dc voltage on a denary digital display” means:

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|-----------|------------|-------------|------------|
| 1. binary | 2. decimal | 3. discrete | 4. crystal |
|-----------|------------|-------------|------------|

9-In terms of their electrical properties, materials can be classified as:

1. Resistors, capacitors, and inductors
2. Conductors, semiconductors, and insulators
3. Copper and fiber
4. Conductors and semiconductors

10-The amount of energy that a valence electron needs to jump from the valnce band to the conduction band is known as the:

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|--------------------|----------------------|
| 1. Valence energy | 2. Conduction energy |
| 3. Inherent energy | 4. Energy gap |

11-What is the meaning of the word “intrinsic” in “An intrinsic silicon crystal has enough energy for some valence electrons to jump in the conduction band”?

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|-------------|--------------|-----------|-------------|
| 1. Inherent | 2. Intensive | 3. Heated | 4. Enriched |
|-------------|--------------|-----------|-------------|

12-The process of recombination in semiconductors is defined as:

1. Impurities added to a semiconductor
2. A conduction-band electron falls back into a hole in the valence band
3. Removing impurities from a semiconductor
4. Putting semiconductor into their positions after splitting them

13-The word “drastically” in “ The conductivity of a semiconductor can be drastically increased by the addition of impurities” means:

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|-------------|---------------|--------------|-----------------|
| 1. Suddenly | 2. Eventually | 3. Gradually | 4. Accidentally |
|-------------|---------------|--------------|-----------------|

14-To increase the number of conduction-band electrons in intrinsic silicon, what kind of impurity has to be added?

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|-------------------------|-----------------------|
| 1. Copper | 2. Carbon |
| 3. Pentavalent impurity | 4. Trivalent impurity |

15-Biasing an electronic device means:

1. Turning on the device
2. Moving it out of its operating point by applying an ac voltage
3. The dc voltages and currents applied to it to set up the desired dc operating point
4. Decoupling it from other parts of the circuit

16-What is the job of a clipping circuit?

1. To remove an ac signal from the circuit
2. To add or subtract a dc voltage to or from an ac signal
3. To change an analog signal to digital
4. To keep an ac signal between a maximum and or a minimum voltage

17-Why are FETs known as unipolar devices?

1. Because only one pole is detected on its terminals.
2. Because they operate only with one type of charge carrier.
3. Because they work upon the field effect property.
4. Because they have only one major carrier.

18-The word “swing” in “The input signal voltage causes the gate-to-source voltage to swing...” means:

1. Drift below
2. Move in a curve
3. Turn off
4. Drift above

19-How is an op-amp used as single-ended input?

1. Only one end of the input signal is connected to the op-amp, and the other is left free.
2. The input signal is applied between two inputs and extracted from one output.
3. The input signal is applied at both inputs and extracted from one output.
4. The input signal is connected to one input with the other input connected to ground.

20-“common-mode rejection” in op-amps is defined as:

1. The ratio of the difference gain to the common gain
2. The amount of noise rejection when it is used in common mode
3. The gain of the common mode
4. The rejection rate of the device when it is fabricated

21-The word “substrate” in “An integrated circuit is a group of devices wired together on a very small substrate” means:

1. printed circuit
2. area
3. an underlying layer
4. scale

22-Basic operations in a digital system are:

1. AND, OR, and NOT
2. NAND and NOR
3. Synchronous and Asynchronous
4. AND, OR, NOT, and FLIP-FLOP

23-Digital circuits are divided into two broad categories:

1. Synchronous and asynchronous circuits
2. Gates and flip-flops
3. Combinational and sequential circuits
4. True or false

24-What are the two limitations on the complexity of LSI and VLSI?

1. Price and compatibility
2. Resolution and technology
3. Protection and heat
4. Size and maximum power dissipation

25-Fetching instructions from memory means:

1. Removing them from memory
2. Taking and bringing back from memory
3. Replacing them in the memory
4. Following the instructions in the memory

1-Science related to the behavior of electrons in devices is called electronics. "devices" means.....

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| 1. tools | 2. areas | 3. designs | 4. fields |
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2-Fuses and circuit breakers canthe current path if too much current flows.

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|-----------------|----------------|---------------|--------------|
| 1. interruption | 2. interrupted | 3. interrupts | 4. interrupt |
|-----------------|----------------|---------------|--------------|

3-According to the situation the switch acts

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|-------------|---------------|--------------|------------------|
| 1. automate | 2. automation | 3. automatic | 4. automatically |
|-------------|---------------|--------------|------------------|

4-The electron jumps to the conduction band a vacancy.

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|------------|----------------|---------------|------------|
| 1. because | 2. in spite of | 3. because of | 4. despite |
|------------|----------------|---------------|------------|

5-The BJT is used as a linear amplifier to boost or amplify an electrical signal and as an electronic switch. boost means.....

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| 1. become weak | 2. increase the power |
| 3. reject the wave | 4. show a picture |

6-In electronics, are a common way of giving information.They allow a great deal of data to be presented in visual form.

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|-----------|-------------|-------------|----------|
| 1. graphs | 2. vehicles | 3. branches | 4. gates |
|-----------|-------------|-------------|----------|

7-Isolation between transistors often is not adequate.adequate means.....

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|--------------|-----------|---------------|---------------|
| 1. difficult | 2. common | 3. sufficient | 4. attractive |
|--------------|-----------|---------------|---------------|

8-Circuits that handle only high and low signals are called digital circuits.handle means.....

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|-----------|------------|---------|------------|
| 1. damage | 2. control | 3. send | 4. receive |
|-----------|------------|---------|------------|

9-When the power is switched on,the circuit switches to one of the stable states and it is not possible to predict the state.predict means.....

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|-----------|---------|---------------|---------------|
| 1. change | 2. move | 3. illustrate | 4. anticipate |
|-----------|---------|---------------|---------------|

10-Packaging serves several purposes,including protecting the chip from chemicalcontamination. contamination means.....

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|----------------------|--------------|------------|--------------|
| 1. industrialization | 2. pollution | 3. sources | 4. materials |
|----------------------|--------------|------------|--------------|

11-'TTL' is the short form or a(n) which stands for Transistor-Transistor Logic.

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|---------------|----------------|-----------------|---------------|
| 1. prediction | 2. association | 3. abbreviation | 4. protection |
|---------------|----------------|-----------------|---------------|

12-A considerable decrease in the power required to implement a given function. implement means.....

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| 1. carry out | 2. take about | 3. look at | 4. pay back |
|--------------|---------------|------------|-------------|

13-Today,ICs are fabricated in large volumes and in different types. fabricate means.....

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| 1. detect | 2. make | 3. destruct | 4. manage |
|-----------|---------|-------------|-----------|

14-Some of the basic functions performed by the various registers are essentially identical. identical means.....

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| 1. the same | 2. the most | 3. different | 4. large |
|-------------|-------------|--------------|----------|

15-Iranian nuclear power plant in Buser is still under

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|--------------|-----------------|-----------------|-------------------|
| 1. construct | 2. construction | 3. constructive | 4. constructively |
|--------------|-----------------|-----------------|-------------------|

1-The electricity has great to the efficiency of the machine.

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|-----------------|------------|--------------|------------|
| 1. Significance | 2. Circuit | 3. Equipment | 4. Compact |
|-----------------|------------|--------------|------------|

2-The organization has been for 25 years.

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|-----------------|--------------|-------------|-----------|
| 1. Appreciation | 2. Equipment | 3. Involved | 4. Outlet |
|-----------------|--------------|-------------|-----------|

3-Electronics, radio, and television are practical applications of the general principles of

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|---------------|---------------|----------------|--------------|
| 1. electrical | 2. electronic | 3. electronics | 4. electrify |
|---------------|---------------|----------------|--------------|

4-The engine was by Ferrari V12.

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|----------|------------|-------------|---------------|
| 1. Power | 2. Powered | 3. Powering | 4. Powerfully |
|----------|------------|-------------|---------------|

5-There is a Tower at an airport from which they direct the movement of an aircraft on the ground and in the air.

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| 1. Control | 2. Controlled | 3. Controllable | 4. Controls |
|------------|---------------|-----------------|-------------|

6-It is a device that is used for the of analog into digital system.

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|--------------|--------------|----------------|---------------|
| 1. Converter | 2. converted | 3. convertible | 4. Conversion |
|--------------|--------------|----------------|---------------|

7-Accuracy is often expressed as a percentage of the quantity being

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|--------------|------------|---------------|-------------|
| 1. measuring | 2. measure | 3. measurably | 4. measured |
|--------------|------------|---------------|-------------|

8-“electrode of a transistor which collects charge carriers” is called

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|-----------------------|--------------|
| 1. bipolar transistor | 2. collector |
| 3. emitter | 4. bias |

9-Depending on their structure, JFETs fall into either of two categories, n channel and p channel.

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|---------------|-------------|-----------|----------------|
| 1. collectors | 2. pictures | 3. groups | 4. connections |
|---------------|-------------|-----------|----------------|

10-“size of a wave at any given time” is called ...

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|--------------|--------------------|-------------|----------|
| 1. amplitude | 2. filter circuits | 3. terminal | 4. noise |
|--------------|--------------------|-------------|----------|

11-“the state of having either a positive or negative electric charge” is called

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|--------------------|---------------------------|
| 1. polarity | 2. differential amplifier |
| 3. floating signal | 4. common-mode |

12- **“any unwanted input signal; interference” is called ...**

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|-------------|---------------------------|
| 1. Terminal | 2. Noise |
| 3. Polarity | 4. Differential amplifier |

13- **“the algebra of binary variables” is called ...**

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|--------------|----------------------|
| 1. FLIP-FLOP | 2. EXCLUSIVE-OR gate |
| 3. Bubble | 4. Boolean algebra |

14- **“a logic circuit whose output is 1 if and only if all its inputs are 1” is called ...**

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|-------------|-------------|--------------|------------|
| 1. NOT gate | 2. AND gate | 3. NADN gate | 4. OR gate |
|-------------|-------------|--------------|------------|

15- **“basic part of a circuit” is called**

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|-----------------------|------------|
| 1. component | 2. base |
| 3. bipolar transistor | 4. epitaxy |