

(الأسئلة في خمس صفحات)

الفيزياء (باللغة الإنجليزية)

تنبيه مهم : يسلم الطالب ورقة امتحانية باللغة العربية مع الورقة المترجمة .**Answer (FOUR) questions only of the following:****First Question:****Write the scientific term for each of the following statements:**

- 1- The angle of deflection of the galvanometer pointer away from zero position per unit current intensity passing through its coil. ()
- 2- The opposition to the flow of an electric current through a conductor. ()
- 3- A physical quantity equivalent to the resistance of a wire of length 1m and cross sectional area 1m^2 , at a given temperature. ()
- 4- A physical quantity equal to the ratio between Planck's constant and the electron momentum. ()
- 5- The work done to transfer a charge of one Coulomb between two points. ()
- 6- The electric transformer through which no electric energy is lost. ()
- 7- The logic gate that has output (high) only if all its inputs are (high). ()
- 8- Dark lines that represent absorption line spectrum of the elements that exist in the sun. ()
- 9- A small resistance connected in parallel to the galvanometer to measure higher current intensity. ()
- 10- The dominant emission in laser sources. ()
- 11- The curve that shows the relationship between the radiation intensity emitted by a blackbody and wavelength. ()
- 12- The magnetic flux passing through a unit area of a surface. ()
- 13- Coded image formed on a photographic plate as a result of interference between the reference beam and the rays reflected from the object. ()
- 14- The way of connecting the pn junction in which the transition layer is as thick as possible. ()
- 15- Emission of a photon from an excited atom to a lower state after its lifetime is over. ()

[بقية الأسئلة في الصفحة الثانية]

Second Question:

First: Choose from group (B) what fits to group (A) by writing the number between brackets:

Group (A)	Group (B)
a) One of the important characteristics of laser ()	1- Within visible light region.
b) An instrument to measure direct current intensity ()	2- Amplifying the laser beam.
c) Wavelengths of Palmer's series are characterized by ()	3- Moving coil ammeter.
d) The operation of the electric generator is based on ()	4- Eddy currents.
e) The resonant cavity is responsible for ()	5- Monochromatic.
f) The operation of induction furnaces is based on ()	6- Electromagnetic induction.
g) One of the most common uses of X-rays is ()	7- Defines the direction of the magnetic flux at the center of a circular coil carrying an electric current.
h) Screw right hand rule is used to ()	8- Imaging bones in the human body.

Second: Choose from group (B) what fits to group (A) by writing the number between brackets:

Group (A)	Group (B)
a) Reciprocal of electric resistivity of ()	1- Weber
b) To find the direction of the induced current trough the dynamo coil, you may use ()	2- Five spectral series
c) The unit of measuring the magnetic flux is ()	3- Electrical conductivity
d) The line spectrum of hydrogen consists of ()	4- npn
e) The average emf induced in a coil can be calculated by the relation: ()	5- $\varepsilon = -BLv \sin \theta$
f) One of the transistor types is ()	6- $\varepsilon = -N \frac{\Delta\phi_m}{\Delta t}$
g) The emf induced in a straight wire moving in a magnetic field can be calculated by the relation: ()	7- Fleming's right hand rule

Third Question:

Put (✓) in front of the correct statement and (×) in front of the wrong statement:

- 1- Lenz's rule is used to determine the direction of the induced current in a coil. ()
- 2- The electric resistivity of conductor material is measured in Ohm. meter ()
- 3- The measuring unit of the coefficient of self-induction is the Henry.()
- 4- The step up transformer is used at the regions of distributing the electric current after transmission. ()
- 5- Lyman's series contains the least wavelengths in hydrogen spectrum.()
- 6- Laser beams are used in the field of communication. ()
- 7- Thermal imaging is used in electrolysis. ()
- 8- The spectrometer is used to generate lasers. ()
- 9- Divisions on the ohmmeter scale have unequal spacing in between. ()
- 10- The multiplier is a resistance of high value connected in series to the galvanometer coil. ()
- 11- The cathode ray tube is used in the production of X-rays. ()
- 12- Two resistors, the value of each is 2Ω , are connected in parallel. Their equivalent resistance will be 4Ω . ()
- 13- The mathematical expression of Ohm's law for a closed circuit is:
 $V_B = I (R + r)$ ()
- 14- The electric charge of the semiconductor crystal of n-type is negative. ()
- 15- The unit of measuring magnetic flux density is the Tesla. ()

[بقية الأسئلة في الصفحة الرابعة]

Fourth Question:

Correct the underlined words in the following statements:

- 1- The electric current is a stream of photons that flow through a conductor. ()
- 2- The transistor is used to amplify the photon beam in the laser device. ()
- 3- Free electrons cannot escape out of the metal surface because of the barrier voltage. ()
- 4- Transistors are considered as simple electronic devices. ()
- 5- The OR gate has one input and one output. ()
- 6- If the current intensity through a conductor is increased, the conductor resistance increases. ()
- 7- The speed of a laser beam is greater than the speed of ordinary light in space. ()
- 8- The sensitive galvanometer is used in measuring high current intensity. ()
- 9- If the current intensity through an electric cell of negligible internal resistance in a closed circuit is increased, the potential difference between its poles decreases. ()
- 10- The electron microscope is used to analyze spectrum into its visible and invisible components. ()
- 11- In the step up transformer, the number of turns in its primary coil equals the number of turns in its secondary coil. ()
- 12- The direction of the motor coil rotation can be determined by using Lenz's rule. ()
- 13- If two parallel straight wires carry electric currents in one direction, they repel. ()
- 14- The torque acting on a coil vanishes when the coil plane is inclined at an acute angle to the lines of magnetic flux. ()
- 15- If the potential difference between the anode and the cathode in the electron microscope is increased, the wavelength associating the electron beam increases. ()

[بقية الأسئلة في الصفحة الخامسة]

Fifth Question:

Complete the following statements using proper terms:

- 1- Of the factors that affect the magnetic dipole moment are.
..... and
- 2- Of the important characteristics of X-rays are
..... and
- 3- Ampere's right hand rule is used to
- 4- The electric power in the primary coil of an ideal step up transformer is
.....the electric power produced in the secondary coil.
- 5- The coil of the electric motor keeps rotating as it passes by the
perpendicular position to the direction of the magnetic flux due to.....
- 6- The unit of measuring the magnetic torque is, while the unit
of measuring the multiplier resistance is
- 7- Induction furnaces are used to
- 8- When a photon of X-rays falls on a free electron, the frequency of
..... decreases while the speed of
increase.
- 9- The magnetic flux density at a point on the axis of a solenoid carrying an
electric current increases if is
decreased.
- 10- The pn junction is used
- 11- The emission of photoelectrons out of the metal surface depends on the
..... of the incident light.

[انتهت الأسئلة]