

رقم المادة : ٦٠٠٧ / ٥/ E

عدد الصفحات ( اثني عشر صفحة ) + الغلاف  
الخارجي + صفحة واحدة مسودة وفقد أية  
ورقة من الكراسة يعتبر مسئولية الطالب.

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جمهورية مصر العربية

وزارة التربية والتعليم والتعليم الفني

امتحان شهادة إتمام الدراسة الثانوية العامة لطلاب الدمج التعليمي

المادة : الفيزياء بالإنجليزية / ( دمج شلي )

( الإجابة في نفس كراسة الأسئلة ) الدور الثاني ٢٠٢٢ م زمن الإجابة : ثلاث ساعات

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إمضاءات المراجعين :

جمهورية مصر العربية

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( الإجابة في نفس كراسة الأسئلة )

رقم المراقبة

اسم الطالب رباعيا /

المدرسة /

رقم الجلوس /

الإدارة /

المحافظة /

التوقيع

الإسم

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توقيع الملاحظين بصحة البيانات  
ومطابقة عدد أوراق كراسة الإجابة  
عند استلامها من الطالب

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غير مصرح للطلاب بالكتابة في هذه الصفحة

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غير مصرح للطلاب بالكتابة في هذه الصفحة

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غير مصرح للطلاب بالكتابة في هذه الصفحة

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غير مصرح للطلاب بالكتابة في هذه الصفحة

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غير مصرح للطلاب بالكتابة في هذه الصفحة

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غير مصرح للطلاب بالكتابة في هذه الصفحة

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**Answer the following questions:**

(الأسئلة في اثني عشر صفحة)

**Group one: Questions from ( 1 - 9 )****1) Answer (A) or (B):****(A) Choose the correct answer:**

The induced current in dynamo's coil when its terminals are connected to two slip rings.....

1) Direct current

2) Eddy current

3) Alternating current

**B) Choose the correct answer:**

The measuring unit for the mutual induction between two coils.....

1) The Webber

2) The Tesla

3) The Henry

**2) Answer (A) or (B):****A) When does the following quantity equal zero?**

"The electromagnetic torque acting on a coil"

**B) When does the following quantity equal zero?**

"The magnetic flux density at the midpoint between two wires carrying the same current intensity"

**3) Answer (A) or (B):****(A) Choose the correct answer:**

A coil has a number of turns equals 200 turns, the magnetic flux passes through it changes by a rate of 0.2 Web./s. then the induced electromotive force in the coil is.....

1) 8Volts

2) 6 Volts

3) 40 Volts

**B) Choose the correct answer:**

A metallic ring of surface area  $0.2\text{m}^2$ , the magnetic flux density acting on it changes by a rate of  $20\text{T/S}$  then the induced electromotive force in the ring equals.....

1) 4Volts

2) 6Volts

3) 8Volts

(بقية الأسئلة في الصفحة الثانية)

**4) Choose the correct answer:**

The magnetic flux density at a point away from a straight wire by a perpendicular distance is given by the relation .....

1)  $\frac{\mu NI}{2r}$

2)  $\frac{\mu I}{2\pi d}$

3)  $\frac{\mu NI}{L}$

**5) Choose the correct answer:**

The average induced electromotive force in Dynamo's coil equal to zero through.....from the perpendicular position

1) Complete cycle

2) half cycle

3) quarter cycle

**6) Choose the correct answer:**

A group of similar resistors the value of each of them is (R) are connected in series, then the total resistance of the circuit is .....

1) NR

2) R/N

3) R

**7) Choose the correct answer:**

Two straight parallel wires the perpendicular distance between them is (d), if the current in the first wire is (I) in the same direction to the current in the second wire which equals (3I) if the force by which the first wire acting on the unit length of the second wire is (F) then the force by which the second wire acting on the unit length of the first wire is.....

1) F

2) 3F

3) 1/3 F

**8) Choose the correct answer:**

The step up transformers near to the power stations step up the voltage to decrease.....

1) The electric energy produced from the station.

2) The electric energy at the consuming zones.

3) The electric energy consumed in the cables.

**9) Choose the correct answer:**

A photon has a momentum  $1.75 \times 10^{-27}$  Kg.m/s. falls on a certain surface, then the wave length of that photon equals.....

(Knowing that Planck's constant  $h=6.625 \times 10^{-34}$  J.S.)1)  $4 \times 10^{-17}$  m2)  $3.785 \times 10^{-7}$  m3)  $2 \times 10^{-20}$  m

(بقية الأسئلة في الصفحة الثالثة)

**Group two: Questions from (10 – 18)****10) Answer (A) or (B):**

A) Write down the scientific term for the following

"The rate of passing the unit of the electric charge through the conductor"

.....  
 .....

B) Write down the scientific term for the following.

"The work done to transfer the unit of the electric charge between two points"

.....  
 .....

**11) Answer (A) or (B):****(A) Choose the correct answer:**

In the ideal transformers ..... is equal

- 1) The number of turns of primary and secondary coils
- 2) The potential difference between the terminals of primary and secondary coils
- 3) The electric power consumes in primary coil and comes out from secondary coil

**(B) Choose the correct answer:**

If the effective induced E.M.F in dynamo's coil equals 200 Volts, then the maximum induced E.M.F equals approximately.....

- 1) Zero
- 2) 200 Volts
- 3) 282.8 Volts

**12) Answer (A) or (B):****(A) Choose the correct answer:**

The equivalent measuring unit for the Webber is .....

- 1)  $\Omega.s$
- 2) V.s
- 3)  $\Omega.C$

**(B) Choose the correct answer:**

A straight wire of length (1m) moves perpendicular to a uniform magnetic field with a velocity (2m/s) as a result an electromotive force of (0.8Volts) is induced in the wire so that the intensity of the magnetic flux in which the wire moves equals.....

- 1) 0.6T
- 2) 0.5T
- 3) 0.4T

( بقية الأسئلة في الصفحة الرابعة )

**13) Choose the correct answer:**

The mass of the photon can be calculated from the relation.....

- 1)  $h\nu$                                       2)  $\frac{h\nu}{c^2}$                                       3)  $\frac{h\nu}{c}$

**14) Choose the correct answer:**

The pointer of the moving coil galvanometer returns to zero position when the current is switched off because of the presence of .....

- 1) The two spiral springs.    2) The concave poles.    3) The metallic cylinder.

**15) Choose the correct answer:**

When the pointer of the ohmmeter refers to one third the scale, then the measured resistance has a value equals.....

- 1) Half the internal resistance of the device.  
2) double the internal resistance of the device.  
3) Equal to the internal resistance of the device.

**16) Write down the scientific term for the following:**

"The induced electric current in a coil is in such a direction opposes the change which causes it"

**17) Choose the correct answer:**

A wire of length ( $\ell$ ) and cross sectional area (A) if its temperature is increased without any effect on its length or its cross sectional area, then the specific resistance of the wire will.....

- 1) Increase                                      2) Decrease                                      3) Remain constant

**18) Choose the correct answer:**

Galvanometer has a coil of resistance  $400 \Omega$  can measure a current of maximum value  $50 \text{ mA}$  if the coil of the galvanometer is connected in parallel to a shunt resistor of  $1.0025 \Omega$  then the maximum current can be measured by the device after modification equals.....

- 1) 10A    2) 20A    3) 25A

(بقية الأسئلة في الصفحة الخامسة)



**The third group questions from ( 19 - 27 )****19) Answer (A) or (B):****A) Write down the scientific term for the following:**

"The opposition of the conductor to the flow of the electric current through it"

.....

**B) Write down the scientific term for the following:**

"The total work needed to transfer the unit of the electric charge through the whole circuit inside and outside the source"

.....

**20) Answer (A) or (B):****(A) Choose the correct answer:**

When the rate of change in the current intensity passing through the coil increases, then the self-induction coefficient of the coil.....

- 1) Decreases                      2) Increases                      3) remains constant

**(B) Choose the correct answer:**

On increasing the intensity of the current passing through the primary coil, then the mutual induction coefficient between the primary and the secondary coils.....

- 1) Decreases                      2) Increases                      3) remains constant

**21) Answer (A) or (B):****(A) Choose the correct answer:**

An electromotive force source has an internal resistance ( $r$ ) is connected in series to a fixed resistor and a key, when the key is switched on the potential difference between the terminals of the source.....

- 1) Increases                      2) Decreases                      3) Doesn't change

**(B) Choose the correct answer:**

A group of resistors connected in parallel the value of the smallest resistor in the group equals one Ohm, then the total resistance of the group will be.....

- 1) Smaller than one Ohm.      2) Equal to one Ohm.      3) Greater than one Ohm.

( بقية الأسئلة في الصفحة السادسة )

**22) Choose the correct answer:**

A straight wire of length (1m.) Carrying a current of intensity (2 A.) Placed so that its plane is perpendicular to a magnetic field, then the wire is affected by a magnetic force (0.6 N.) so that the intensity of the magnetic flux acting on the wire equals.....

1) 0.1T.

2) 0.2T.

3) 0.3T.

**23) Choose the correct answer:**

A light beam falls on the surface of a metal so that the electrons are released from the surface without gaining any kinetic energy, then the energy of the photons of the incident light is ..... The work function of the metal.

1) Smaller than

2) Equal to

3) Greater than

**24) Choose the correct answer:**

In the pure silicon crystal at room temperature the ratio between the number of negative charge carriers and the number of positive charge carriers is..... one.

1) Smaller than

2) Equal to

3) Greater than

**25) Choose the correct answer:**

The code.....in the binary system is corresponding to the number (30) in decimal system.

1) (11010)<sub>2</sub>2) (101101)<sub>2</sub>3) (11110)<sub>2</sub>**26) Choose the correct answer:**

A circular coil of radius 11 cm. consists of 350 turns connected to a battery so that the current passes through the coil is 5A. Then the magnetic flux density (B) at the center of the coil equals.....

1) 1T

2) 0.1T

3) 0.01T

(بقية الأسئلة في الصفحة السابعة)

**27) Choose the correct answer:**

A coil of alternating current dynamo the area of its face is  $0.2\text{m}^2$  and the number of its turns is 100 turns revolve in a magnetic flux of uniform density 0.35 T with a frequency of 50 Hz so that the maximum electromotive force induced in the coil equals.....

- 1) 200 V.                                      2) 220 V.                                      3) 240 V.

**Fourth group (28 -36):****28) Answer (A) or (B):****A) Choose the correct answer:**

If the intensity of the current of the emitter is 40 mA. And the intensity of the current of the collector is 39.6 mA. Then the value of  $\alpha_e$  in the transistor equals.....

- 1) 0.95                                      2) 0.99                                      3) 1.99

**B) Choose the correct answer:**

If the intensity of the current of the base is  $80\ \mu\text{A}$ . And the intensity of the current of the collector is 4 mA. Then the value of  $\beta_e$  in the transistor equals.....

- 1) 500                                      2) 250                                      3) 50

**29) Answer (A) or (B):****A) Choose the correct answer:**

The shortest wave length in the spectra produced from excited Hydrogen atom exist in .....

- 1) Lyman's series                      2) Paschen's series                      3) Pfund's series

**B) Choose the correct answer:**

The glowing of a heavy metal at high temperature and receiving the spectrum produced on a photographic plate, the received spectrum will be.....

1) Continuous emission

2) Line emission

3) Line absorption

**30) Answer (A) or (B)****A) Choose the correct answer:**

Ampere right hand rule is used to.....

1) Determine the direction of the induced E.M.F in a straight wire.

2) Determine the direction of the induced E.M.F in a circular coil.

3) Determine the direction of the magnetic flux around a straight wire a current.

**B) Choose the correct answer:**

Fleming left hand rule is used to.....

1) Determine the direction of the magnetic force acting on a straight wire carrying current.

2) Determine the direction of the induced E.M.F in a circular coil.

3) Determine the direction of the magnetic flux around a straight wire carrying a current.

**31) Choose the correct answer:**

When the energy of the incident light on the surface of a metal is increased to double, then the work function of the metal will.....

1) Decrease to half

2) increase to double

3) remains constant

(بقية الأسئلة في الصفحة التاسعة)





**42) Choose the correct answer:**

The coils of standard ohmic resistors are made of double wound back wires to.....

- 1) Decrease the resistance of the wire.
- 2) Avoid self-inductance.
- 3) Facilitate the conduction.

**43) Choose the correct answer:**

The laser beam in (He-Ne) laser is produced when the excited atoms of.....relax from a certain excited level to a lower level

- 1) Helium only
- 2) Neon only
- 3) Helium and Neon

**44) Choose the correct answer:**

The laser beam is used in cauterize the retina because laser beam has.....

- 1) Thermal effect.
- 2) Highly coherent.
- 3) High intensity.

**45) Choose the correct answer:**

From the devices which the scientific idea of its action based on the electromagnetic induction is.....

- 1) The electric motor.
- 2) The galvanometer.
- 3) The electric generator.

( انتهت الأسئلة )

\*\*\* ÖZGÜL \*\*\*



