

امتحان تجريبى شهادة إتمام الدراسة الثانوية العامة

نموذج ثانوية عامة

المادة : علم الأحياء

التاريخ : / / ٢٠١

زمن الإجابة : ثلاث ساعات

عدد أوراق الإجابة (١٣) ورقة
بخلاف الغلاف
وعلى الطالب مسؤولية المراجعة
والتأكد من ذلك قبل تسليم الكراسة



مجموع الدرجات

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رقم المراقبة

مجموع الدرجات بالحروف :

امضاءات المراجعين :

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وزارة التربية والتعليم

امتحان تجريبي شهادة إتمام الدراسة الثانوية العامة

المادة : علم الأحياء

التاريخ: / / ٢٠١٩

زمن الإجابة : ثلاث ساعات

رقم المراقبة

اسم الطالب (رابعيًا) /

المقدمة:

رقم الجلوس:

نموذج ثانوية عامة

الإفارة :

الحقيقة :

1

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

تعليمات هامة:

عزيزى الطالب:

1. اقرأ السؤال بعناية، وفكر فيه جيداً قبل البدء فى إجابته.
2. أجب عن جميع الأسئلة ولا تترك أى سؤال دون إجابة.
3. عند إجابتك للأسئلة للمقالية، أجب فيما لايزيد عن المساحة المحددة لكل سؤال.

مثال :

.....
.....
.....

4. عند إجابتك عن أسئلة الاختيار من متعدد إن وجدت:
ظلل الدائرة ذات الرمز الدال على الإجابة الصحيحة تظليلاً كاملاً لكل سؤال .

مثال : الإجابة الصحيحة (ج) مثلاً

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<input type="radio"/>	ب
<input checked="" type="radio"/>	ج
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- في حالة ما إذا أجبت إجابة خطأ، ثم قمت بالشطب وأجبت إجابة صحيحة تحسب الإجابة صحيحة.
- وفي حالة ما إذا أجبت إجابة صحيحة، ثم قمت بالشطب وأجبت إجابة خطأ تحسب الإجابة خطأ.
- في حالة التظليل علي أكثر من رمز، تعتبر الإجابة خطأ.

ملحوظة: لا تكرر الإجابة عن الأسئلة الموضوعية (الاختيار من متعدد) ،

فلن تقدر إلا الإجابة الأولى فقط .

5. عدد أسئلة الكتيب (60) سؤالاً .
6. عدد صفحات الكتيب (28) صفحة خلاف الغلاف.
7. تأكد من ترقيم الأسئلة تصاعدياً، ومن عدد صفحات كتيبك، فهي مسئوليتك.
8. زمن الاختبار (3) ساعات .
9. الدرجة الكلية للاختبار (60) درجة .

Answer the Following Questions:

Questions (1: 3) :Write the scientific concept for each of the following

1. The mutual induction coefficient of a coil when an induced electromotive force of 1 V when the electric current change by a rate of 1 A per second.

.....
.....

2. The ratio between The maximum potential differences measured by galvanometer to the maximum potential difference measured after converting it to voltmeter.

.....
.....

3. Spectrum has all possible wavelength

.....
.....

Questions (4: 7) :choose the correct answer for each of the following

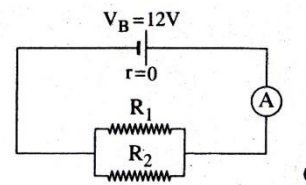
4.

The average value of A C current equals .. (I_{eff} , I_{max} , Zero , no correct answer)

.....

5.

In the show circuit, if the reading of ammeter (A) equals 5 A and electric current intensity in resistor (R_1) equals 2 A. The value of resistance R_2 equals ($1/4$, 2 , 4 , 6) Ohm



.....

6.

Paschin series lies In (ultra violet , visible light , Infra red , X- rays) region

.....

7.

The ratio between the energy of photon and velocity of light in air is the photon
(mass - momentum - frequency - kinetic energy).

.....
.....

Questions (8 : 10) What is happened in each case of the following:

8.

The alternating current passes through the galvanometer's coil.

.....
.....

9.

Decreasing of radius of a coil carrying a current respect of
magnetic flux density.

.....
.....

10.

Doping silicon atom with a metal of fifth group

.....

.....

Question (11 : 12) Step down transformer is used to operate a lamp of power 24 Watt and works at a potential difference of 30 V by using a source of electro motive force of 240 V, if the number of turns of primary coil is 480 turns, Calculate:

11.

The electric current intensities in each of two coil primary and secondary

.....

.....

.....

.....

.....

.....

.....

12.

Number of turns of the secondary coil.

.....

.....

.....

.....

Questions (13 : 15) When does the following values equal zero ?

13.

The rate of change of the magnetic flux cutting the coil in the dynamo.

.....

.....

14.

The current intensity in AC circuit contains an inductive coil.

.....

.....

15.

The current intensity in the primary coil of an electric transformer connected to AC source

.....
.....

Questions (16 : 20)) What will happen in the following cases ?

16.

Connecting p-n junction forwardly.

.....
.....

17.

Replacing the target in Coolidge tube by another of larger atomic number.

.....
.....

18.

Return the electrons in the excited atoms to the lower energy level after the life time is over.

.....
.....

19.

Equality the inductive reactance of a coil with the capacitive reactance of a capacitor
in the resonant circuit.

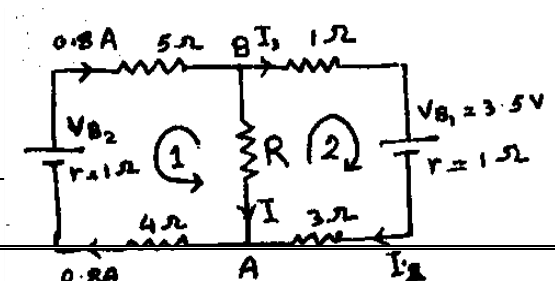
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20.

Connecting the primary coil of an electric transformer to an AC source and the secondary coil circuit is opened.

.....
.....

A) Questions (21 :22) In the following circuit and by using Kirchhoff's



laws (using the same direction of electric current and the given path on the circuit)
Calculate each of :

21. The electro motive force V_{B1}

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

22. The value of current I (knowing that $V_{AB} = 5 \text{ V}$)

.....

.....

.....

.....

.....

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.....

.....

Question (23 : 25) Give reason for each of the following:

23.

The galvanometer's pointer connected to the terminals of a moving straight wire

between two poles of magnet doesn't deflect.

.....
.....

24.

The electric transformer doesn't use to step up or step down the direct electromotive force.

.....
.....

25.

The electromotive force of a cell equals the potential difference across its terminals when the circuit is opened.

.....
.....

Questions (26 : 29) What is meant by each of the following?

٢٦. The magnetic flux density of a coil = 0.2 Tesla

.....
.....

٢٧. The sensitivity of galvanometer is 40 micro ampere for each section

.....
.....

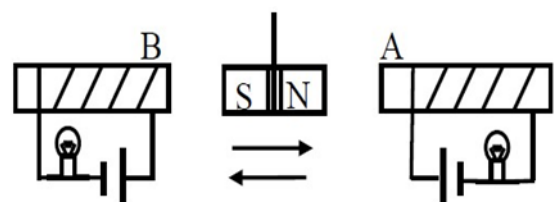
٢٨. The electro motive force of a battery = 1.5 Volt

.....
.....

29. The effective value of A C current = 2.828 Ampere

.....
.....

Questions (30 : 31) in the opposite circuit; what happens for the illumination of the two lamps



joining with the two coils A and B, once as the magnet moves towards coil A, and another when moving towards the coil B.

٣٠. Once the magnet moves towards the coil A

Lamp joins to the coil A

.....

.....

Lamp joins to the coil B

.....

.....

٣١. Once the magnet moves towards the coil B

Lamp joins to the coil A

.....

.....

Lamp joins to the coil B

.....

.....

Questions (32 : 36) compare between:

۳۲.

Joining resistors in series and in parallel due to the voltage across resistors.

۳۳.

The direction of motion for both of the coil of sensitive galvanometer and the coil of the d.c motor.

۳۴.

Ampere's right hand rule and Fleming's right hand's rule.

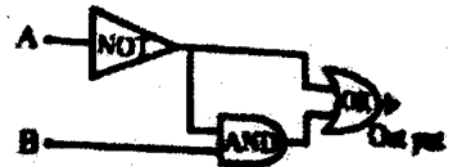
۳۵.

The coefficient of self-induction and the coefficient of mutual induction due to their mathematical relation.

۳۶.

Motor and dynamo due to the starting position of their coils.

Questions (37 : 38) The following figure represents some of logic gates in an electronic circuit



۳۷. from the figure complete the truth table

A	B	output

٣٨. them change the output to decimal number

.....

.....

Questions (40 : 41) A sensitive galvanometer, the resistance of its coil is $10\ \Omega$ and the maximum electric current can be pass through it 20 m A , It is converted to an Ohmmeter by connecting it with a battery of electro motive force of 1.5 V , Calculate :

٤٠. The required standard resistance

.....

.....

٤١. The value of external resistance which makes the pointer deflects to quarter its value

.....

.....

Questions (42 : 46) What is the scientific idea which the operation of each of the following depends on

٤٢. Moving coil galvanometer

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.....

٤٣. Oscillating circuit

.....

.....

٤٤. Induction coils

.....

.....

٤٥. Lasing action

.....

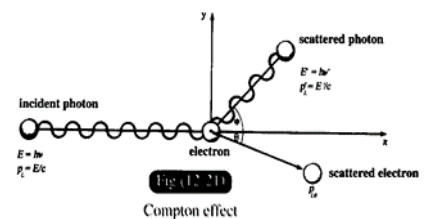
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٤٦. P –N junction as a rectifier

.....

.....

Questions (47 : 49) In the figure, a photon of gamma ray collides with a free electron at rest, answer the following:



٤٧.

What is happened for frequency of photon?

.....

.....

٤٨. What is this tendency proving?

.....

.....

What is its name?

.....

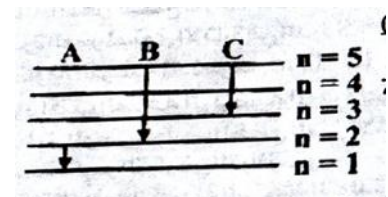
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٤٩. What is happened for electron?

.....

.....

Questions (50 : 52) In the following figure shown three transition (A , B & C) for hydrogen series:



٥٠. Which of them gives spectrum in ultra violet

.....

.....

٥١. Which of them has high energy

.....

.....

What is the name of series number B

.....

.....

Questions (53 : 55) What is happened in each of the following cases?

53. If the separation between each two turns of a solenoid is decreased to its half value (with respect to the magnetic flux density at a point on its axis inside it)

54. If the intensity of incident light on a metal surface (whose frequency is greater than the critical frequency) in an evacuated tube is increased to double (with respect to the maximum kinetic energy of emitted electrons from metal)

If the potential difference between the filament and the target in Coolidge tube is increased (with respect to the wavelength of characteristic radiation)

Questions (56 : 58) Mention the physical quantity of each unit, then mention the definition for each quantity:

٥٦.

$N / A . m$

٥٧.

N / A^2

Questions (59 : 60) A small dynamo consists of 70 turns rotates in a magnetic field of magnetic flux density 0.4 Tesla, the following table illustrate the value of maximum induced electro motive force producing and change of frequency.

e. m .f (V)	10	20	30	40
F (Hz)	20	40	60	80

٥٨.

Plot the graphical relation between e .m .f in y_ axis and frequency (v) on x_ axis,

from the graph find:

09. The area of the coil

.....

.....

The angular velocity when electro motive force is 25 V ($\pi = 22/7$)

.....

.....

مسودة

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