English Language (1) Exam
Code :015
21/1/2020
Total Marks: 50
Two Hours

I- Choose the correct **topic sentence**: **(2×2.5= 5 Marks)**

1.Alanna is afraid of spiders. She screams every time she sees one. If she sees one, she runs away.

a. Alanna is afraid of spiders. b. Spiders have 8 legs.

c. She screams every time she sees one. d. If she sees one, she runs away.

2. I hate doing laundry. It takes a long time to do. I do not like folding the clothes. I never can get the wrinkles out.

a. It takes a long time to do. b. I hate doing laundry.

c. I never can get the wrinkles out. d. I do not like folding the clothes.

II-Read the story. Then answer the questions below: (5×2= 10 Marks)

My name is Olaf.

I live in a big city. I live on a busy road. During the day and at night, cars go by. Buses go by. Trucks go by. People do not seem to hear the noise during the day. But at night, the noise makes it hard to sleep. My road has a lot of animals, too. People keep their animals outside in their yards at night. There are cats. There are dogs.

The dogs make a lot of noise. To me, the dogs are like the trucks. The dogs are like the cars. The dogs are like the buses. All of them are loud! One dog barks more than the others do. His name is Simba. Simba is Mr. Cheek's dog.

"That is a very bad dog. He keeps me up at night," says Mr. Lucas.

Mr. Lucas lives next door to Mr. Cheek.

"You should give him away," says Mr. Lucas.

This makes Mr. Cheek very mad. "You should not sleep with your windows open," says Mr. Cheek.

"You should take your dog inside at night," yells Mr. Lucas.

The two men argue about Simba's barking almost every day. I think this is funny. To me, Simba is as bad as the cars. He is as bad as the buses. He is as bad as the trucks. This is what living in a big city is like. There is a lot of noise.

1)In what place does Olaf live?

A. in a small apartment B. in a big city C. in a quiet neighborhood D. in a busy town

2) Why may people not seem to hear the noise during the day?

A. because it is quiet B. because they are sleepy

C. because they are busy doing other things D. because they do not hear well during the day

Turn to Page Two

3) Which noise makes Mr. Lucas mad?

A. cats meowing B. trucks going by C. a dog barking D. people talking

4) Who says Simba is a bad dog?

A. Olaf B. Mr. Lucas C. Olaf and Mr. Lucas D. no one

5) What does Olaf mean when he says Simba is as bad as the buses?

A. that Simba barks at the buses B. that Simba and the buses argue

C. that Simba runs down the street at night D. that Simba and the buses both make noise

III- Choose the correct answer: **(10× 2= 20 Marks)**

1.This singer, along with a few others, (a. play- b. plays) the harmonica on stage.

2.Each of the dancers (a. twirl – b. twirls) brilliantly.

3. Sandals and towels (a. are – b. is) essential gear for a trip to the beach.

4. I tried to buy tickets for the concert, but (a. they- b. it) were all sold.

5. Each of the girls brought (a. her – b. their) book.

6. Neither Alex nor his friends lost (a. his – b. their) way.

7. John was an adventurer, explorer, and educated people. This is a (a. Parallel-b. non parallel) structure.

8. The film is full of (a. allusions- b. illusions) to Hitchcock.

9. As a political party, they are trying to (a. effect- b. affect) a change in the way we think.

10. Are you (a. inferring- b. implying) that I am fat.

IV- State whether the following sentences are **simple, compound, complex,** or **compound complex:** **(5×1= 5 Marks)**

1.When he began his research paper, he was confident.

2. She succeeded in the exam.

3. I am very tired, but I have no time to rest now.

4. Samir joined college in Assuit, and I joined college in Cairo.

5.After he wrote his final draft on his computer, he changed it, and then he erased it to start all over again.

V- Translate the following into **Arabic:** **(2×5= 10 Marks)**

1.It is said that television has destroyed the art of conversation and made people unhappy by forcing them to want things they don't need. On the other hand, it helps people to update their knowledge of the world affairs, as they can see current events in different parts of the world the moment they occur.

2. The advantages of going to Britain seem obvious. Firstly, you will be able to listen to the language all the time you are in the country. You will be surrounded completely by the language wherever you go. Another advantage is that you have to speak the language if you are with other people.

Best Wishes

Examiners: Dr. Abeer M. Raafat Khalaf Dr. Abeer Khalaf

Dr. Mariana Nagaty

English Language (2) Exam
Code :020
21/1/2020
Total Marks: 50
Two Hours

I- Choose the best answer to complete the dialogue: (5×2= 10 Marks)

1. **Tom:** Do you know Brian Christopher?
   Adam: I can't picture him. .....
   Tom: He is quite short and he's got short straight hair. He is cheerful.
   a. What does he like?
   b. What does he look like?
   c. How is he?
   d. Where is he from?
2. **Adam:** My parents don't give me enough pocket money.
   Tom:.....
   Adam: No, they aren't. But they don't trust me I think.
   a.Do they have enough money?
   b. Are they a bit mean?
   c.Did they know that your pocket money is not enough for you?
   d.Do your parents work?
3. **Harry:** A group of foreign investors are going to take over our company.
   Nell: .....
   Harry: I'm sure I will have some trouble.
   Nell: Then you had better start looking for a new job.
   a.Actually, I don't think it's true.
   bWhen did you realize that you would never be promoted?
   c.Do you think this will affect your status?
   d.If I had so much money, I would do the same thing.
4. **Chris:** Shall we leave the car here and walk?
   Nick: I don't think we should because the bank is almost five hundred meters from here.
   Chris:.....
   Nick: I don't care. I can't walk up to the bank in this weather.
   a. It may take more than an hour to walk to the bank.
   b. They've decided to open a new branch near here.
   c. But it's very difficult to find a parking place near the bank.
   d. I agree. The bank will have been closed by then.
5. **Sandra:**.....
   George: Then you should start wearing glasses.
   Sandra: I already have contact lenses, but still I can't see clearly.
   George: It's time you changed them, then.
   a. When did you last go to an eye doctor?
   b. Should I tell my grandmother to see an optician? **Turn to page Two**

c. I can't see the sentences on the board.

d. Are you able to see better now?

II-Read the following and **answer the questions** below: **(5×2=10 Marks)**

This is my first year attending Wilson Middle School. Last year I went to a different middle school. Over the summer my father got a new job, so our whole family moved. Now I go to Wilson.

I want to make some comments based on my unique **perspective** as someone who has attended two different middle schools. For example, I was surprised by all the complaints that the students at Wilson make about the food in the cafeteria. Either they don't like it, or they want more choices. But I like the food. The dishes are pretty tasty. And as for choices, at the school I went to last year there were never more than two lunch options each day. Sometimes there was only **one**!

However, I don't want anyone to think that I have a negative opinion of the Wilson students. Actually, I have been impressed with how involved the students here are. I plan to participate in some of the special clubs here that are organized by students, like the photography club and the hiking club. At my last school, students were not as actively involved in forming clubs.

1. **Why is the author a student at Wilson Middle School?**

a. Because his family recently moved b. Because his father is a teacher there

c. Because it is the best school in the area d. Because he just completed primary school

2. **In line 4, the word perspective is closest in meaning to _____.**

a.cause and effect b. back and forth c. out of date d. point of view

3. **In line 8, the word one refers to _____.**

a. day b. school c. option d. cafeteria

4. **Why does the author like the food at Wilson Middle School?**

a. It tastes good. b. It is very healthful. c. The servings are large. d. Students help to make it.

5. **What does the author imply about the students at his previous school compared to students at Wilson Middle School?**

a. They did better in their studies. b. They planned fewer activities.

c. They belonged to sports clubs. d. They gave him more help.

III- Write down the name of **word formation process** through which the underlined words are produced: **(5×1= 5Marks)**

1.Sometimes one just needs a good cry.

2.We need to highlight the issue.

3.They are offering good coffee.

4.They need to do some lab work.

5. Let's go and have a brunch.

IV- Choose the one **word or phrase** which would **best keep the meaning** of the original sentence if it were substituted for the **underlined word**. **(5×1= 5Marks)**

1.The supervisor dictated a memo to her secretary.

a.letter b. report c. note d. research paper

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2.Under the major's able leadership, the soldiers found safety.

a.guidance b. flagship c. intensity d. ability

3. Exchanges of language and culture were a direct result of commerce.

a.embargo b. stagnation c. trade d. schooling

4. In that organization, they place emphasis on mutual aid and cooperation.

a.reward b. stress c. work d. pressure

5. Marsha found it difficult to cope with the loss of her job.

a.anticipate b. deal with c. think about d. confirm

V- Choose the **correct** answer: **(10×1=10 Marks)**

1. As a political party, they are trying to (a. effect- b. affect) a change in the way we think.
2. The film is full of (a. allusions- b. illusions) to Hitchcock.
3. The concert had (a. already- b. all ready) begun by the time we arrived.
4. The government ought to abolish the tax (a. all together- b. altogether).
5. She (a. ensured- b. assured) him that the car would be ready the next day.
6. John (a. sites- b. cites) T. S. Eliot and Shakespeare in his article.
7. Strawberries and cream (a. compliment- b. complement) each other perfectly.
8. I have had (a. continual – b. continuous) problem with this car ever since I bought it.
9. Amr Diab is an (a. imminent – b. eminent) singer.
10. Let's discuss the matter (a. farther- b. further) tomorrow.

VI- **Translate** the following into **Arabic:** **(2×5= 10 Marks)**

1-The last decade of the twentieth century witnessed great efforts for the sake of children's welfare. Many laws were passed to protect children against early employment. We have to sacrifice our comfort and happiness for the future generations.

Best Wishes

Main Examiner: Dr. Abeer M. Raafat Khalaf Dr. Abeer Khalaf

كلية العلوم
الفصل الدراسي الاول
٢٠١٩/١٢/١٤ م

امتحان لطلاب كلية العلوم
تاريخ العلوم

الزمن: ساعتان
العلامة: تاريخ العلوم (٢ د م ج)
اليوم: السبت
التاريخ: ٢٠٢٠/١/١١ م .

أجب عن جميع الاسئلة الاتيه

السؤال الاول: ضع علامة صح او خطأ امام العبارات الاتية مع تصويب الخطأ: (٣٠ درجة)

(١) يعتبر ابن سينا اول من الف موسوعة الجامع الكبير ( )

(٢) يعتبر طاليس من مؤسسي علم الهندسة في مصر عند اليونانين ( )

(٣) يعتبر ابن البطار من الرواد الاوائل في علم التشريح ( )

(٤) من اهم انجازات الحسن ابن الهيثم هو كتاب ميزان الحكمة ( )

(٥) ابو بكر الرازي هو اول من اخترع الحقنة لاعطاء الادوية تحت الجلد وسماها الزراقة ( ).

(٦) يعتبر الاطباء المصريين اول من وضعوا طريقة التقطير في العالم ( ).

(٧) يعتبر ابو القاسم الزهراوي اول من لقب بشيخ الجراحين والف موسوعة التصريف ( ).

(٨) سميت ارضية فيرلر باسم الارضية البحرية ( )

(٩) اليونانين هم اول من قالوا ان الارض قرص مسطح تحيط به المياه ( ).

(١٠) من اشهر علماء العرب في علم الارض ابن البيروني ( ).

السؤال الثاني: (٢٠ درجة)

(أ) اذكر فضل العلوم الاسلامية علي اوربا وكيف استفادت منها.

(ب) اعطي مقارنة بين ارضية فيرلر وارضية هتون في تطور علم الارض؟

السؤال الثالث: (٢٠ درجة)

(أ) تكلم عن علم التشريح في الطب الاسلامي.

(ب) تكلم عن تطورات علم الارض عند المسلمين مع ذكر بعض من اهم انجازتهم في ذلك؟

مع تمنياتي لكم بالتوفيق

استاذ الدكتور / احمد ماهر عبدالباسط

جامعة أسيوط
كلية العلوم

امتحان نهاية الفصل الدراسي الأول
العام الجامعي ٢٠١٩/٢٠٢٠

تاريخ العلوم (١٢ م.ج)
المجموعة الثانية
الزمن: ساعتان

درجات الامتحان ٥٠ درجة، وأسئلة الامتحان على صفحتين.

أجب عن الأسئلة الآتية:

السؤال الأول: اختر الإجابة الصحيحة من بين الأقواس: (١٠ درجات)

١) يبلغ عمر العلم بحسب السجلات المكتوبة حوالي (ألف عام – ألفي عام – خمسة آلاف عام).

٢) تظل الإنجازات العلمية محصورة في الإطار المعرفي السائد في حالة (التطور التدريجي للعلم – التطور الثوري للعلم – تبديل النموذج العلمي).

٣) تاريخيا يعتبر العالم الهولندي يان إنجنهويش (مكتشف السلسلة الغذائية – مكتشف البناء الضوئي – مكتشف الهيدروجين).

٤) تميزت الحضارة الإغريقية (بالبحث في أسرار المادة – بالاهتمام بالفضاء – بإعلاء قيمة العقل).

٥) الذين استخدموا الهندسة كأداة لإجراء عمليات الطرح والجمع والضرب والقسمة هم (المصريون القدماء – الإغريق – الصينيون).

٦) ركزت الكيمياء في بداياتها على محاولة إنتاج (المواد المطلوبة للتحنيط – المواد النفيسة من المواد الرخيصة – الأدوية والأسمدة).

٧) من إنجازات العالم الأمريكي أوزوالد آفري (اكتشاف الحمض النووي DNA – اكتشاف تركيب الحمض النووي DNA – اكتشاف دور الحمض النووي DNA كحامل للمعلومات الوراثية).

٨) استلهم تشارلز داروين نظرية شمولية التكوين pangenesis من أفكار (قدماء المصريين – الإغريق – العرب).

٩) من الإنجازات العلمية التي يمكن اعتبارها تبديلا للنموذج paradigm shift (اكتشاف مركزية الشمس بدلا من مركزية الأرض في المجموعة الشمسية – صياغة فرضية رباعي النيوكليوتيدة – وضع نظرية الفلوجستون).

١٠) اقترح معيار القابلية للتكذيب كأداة لتمييز العلم عن اللا علم بواسطة (الفيلسوف رينيه ديكارت – الفيلسوف كارل بوبر – العالم وليام هارفي).

السؤال الثاني: أجب عن <u>أربعة فقط</u> مما يأتي: (٢٠ درجة)

أ) اكتب تلخيصا لإسهامات جابر بن حيان في مجال الكيمياء.

ب) قارن بين معالم الفيزياء الكلاسيكية وفيزياء الكم.

جـ) اختر عالما ممن ساهموا في إحداث نهضة علمية في مجال البيولوجيا الجزيئية ثم اشرح إنجازه.

د) اشرح المقصود بكارثة فوق البنفسجي، واذكر كيف تصرف العلماء تجاهها.

هـ) اكتب نبذة مختصرة عن جزيء الحمض النووي المطعم recombinant DNA وكيف تم التوصل إليه.

بقية الأسئلة في ظهر الصفحة <<<

<<< استكمال للأسئلة من الصفحة السابقة

السؤال الثالث: أجب عن أربعة فقط مما يأتي: (٢٠ درجة)

أ) اكتب نبذة عن الكيمياء في مصر القديمة، والإضافات التي أدخلها أرسطو على الكيمياء.

ب) ما هي نظرية الفلوجستون؟ اذكر أوجه الخطأ وأوجه الصواب فيها.

جـ) وضح لماذا لم يلق استنساخ جنين الإنسان عام ١٩٩٣ على يد اثنين من العلماء الأمريكيين كثيرا من الاهتمام الإعلامي.

د) اشرح كيف يمكن التمييز بين العلم واللا علم، وكيف يمكن الحكم على نشاط معين بأنه نشاط علمي أو غير علمي.

ه) اكتب نبذة عن المنهج الاستقرائي وأنواع العلوم التي يمكن تحصيلها بواسطته.

انتهت الأسئلة ـــــــــ مع التمنيات بالتوفيق

الممتحن: أ.د. مدحت مريد صادق

جامعة اسيوط
كلية الحقوق

امتحان مقرر
حقوق الانسان

دور يناير2020م
الزمن: ساعتان

لطلاب كلية العلوم

أجب عن سؤالين فقط من الأسئلة الآتية:

السؤال الأول:

عرف حقوق الانسان مبينا خصائصها ؟

السؤال الثانى:

اذكر اهم الحقوق التى تضمنها الاعلان العالمى لحقوق الانسان ؟

السؤال الثالث:

عرف الفساد المالى والادرى مبينا اهم اسبابه ؟

السؤال الرابع :

وضح من وجهه نظرك اليات مكافحة الفساد المالى والادارى ؟

ـــــــ انتهت الأسئلة مع خالص التمنيات بالتوفيق ـــــــ

د.محمد عبد العليم الهمامي

اختبار نهاية الفصل الدراسي الاول 2020/2019

في مقرر

"فيزياء البلازما وتطبيقاتها"

تاريخ الامتحان: 23 /12 / 2019

الزمن: 9 – 12 ص

اجب عن اربعة اسئلة فقط ممايأتي:

السؤال الاول: ماالمقصود بحالة البلازما؟ وما هو الاساس العلمي لدراستها؟ ثم اذكر اهم تطبيقاتها؟

السؤال الثاني: ناقش حركة الجسيمات المشحونة في المجالات الكهربية والمغناطيسية الثابتة الشدة؟

السؤال الثالث: استنتج بالمعادلات الرياضية الفيزيائية معادلة التردد السيكلتروني للالكترونات في البلازما؟

السؤال الرابع: وضح بالمعادلات الرياضية الفيزيائية- ان المجال المغناطيسي المتغير مع الزمن- يؤدي الي تغير في الطاقة الحركية للشحنات مع بقاء العزم المغناطيسي ثابتا؟

السؤال الخامس: ناقش اهم طرق تشخيص حالة البلازما؟

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كل الامنيات الطيبة بالتوفيق.....

Assiut University **Faculty of Science** **Physics Department**		**Final Exam: 2019-2020** **Date: Dec. 26th, 2019** **Time: 2 hours**

Course name: General Physics (2) **105 P (50%)** **Coordinator:** Dr. Alaa Abd-Elnaiem

Constants: $\varepsilon_0=8.85\times10^{-12}\ C^2/N\ m^2$; $k_e=9\times10^9\ Nm^2/C^2$; $e=1.6\times10^{-19}\ C$; $m_e=9.1\times10^{-31}\ kg$; $N_A=6.02\times10^{23}\ atoms/mole$

Answer all the following questions

Question (I): In the following multiple-choice questions, please choose the correct answer. **You must write down the steps to get the correct answer.** **(18 Marks)**

1. A positively charged particle traveling with a velocity $\vec{v}$ in an electric field $\vec{E}$ experiences a force $\vec{F}$ that must be:
   A. parallel to $\vec{v}$ **B.** parallel to $\vec{E}$ **C.** perpendicular to $\vec{v}$ **D.** perpendicular to $\vec{E}$
2. The equivalent resistance of the circuit shown in **Figure 1** is:
   A. 6.3 kΩ **B.** 727.3 Ω **C.** 3.0 kΩ **D.** 7.36 kΩ
3. The equivalent capacitance of the circuit shown in **Figure 2** is (**C** is arbitrary unit):
   A. 0.5 C **B.** 1 C **C.** 1.5 C **D.** 2 C
4. Two identical charges, **2 m** apart, exert forces of magnitude **4 N** on each other. The value of either charge is:
   A. 1.8×10^{-9} C **B.** 4.2×10^{-5} C **C.** 1.9×10^{5} C **D.** 3.8×10^{9} C
5. Three charges **+q**, **+Q**, and **−2Q** are placed at the corners of an equilateral triangle as shown in **Figure 3**. The net force direction, on charge **+q** due to the other two charges is best represented by which of the following arrows?
   A. ←. **B.** ↑. **C.** →. **D.** ↘.
6. The total charge entering a terminal is given by $q=(8t^2+3t-9)\ \mu C$, then the instantaneous current at **t=0.5 s** is:
   A. 18.6 μA **B.** 11 μA **C.** -5.5 μA **D.** 2 μA
7. Two point charges, (8×10^{-9} **C**) and (-2×10^{-9} **C**) are separated by **4 m**. The electric field magnitude (in units of V/m) midway between them is:
   A. 9×10^{9} **B.** 1.35×10^{4} **C.** 22.5 **D.** 36×10^{-9}
8. The electron and proton of the hydrogen atom are separated by a distance of approximately 5.3×10^{-11} **m**, the magnitude of the electric force between the two particles:
   A. 8.2×10^{-8} N **B.** 3.6×10^{-47} N **C.** 8.2×10^{-15} N **D.** 3.6×10^{47} N
9. The magnitude of the electric force on a proton placed in an electric field of 2×10^4 **N/C** directed along the positive *x*-direction:
   A. 3.2×10^{15} N **B.** 3.2×10^{-15} N **C.** 9.2×10^{-8} N **D.** 9.2×10^{8} N

Figure 1

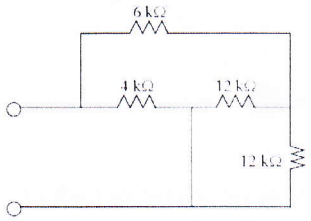


Figure 2

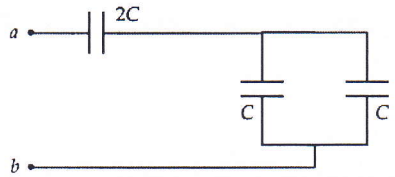
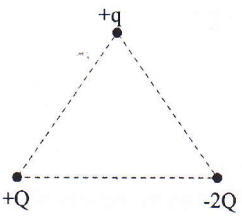


Figure 3



Question (II): Put (√) or (×) for all the following sentences: **(10 Marks)**

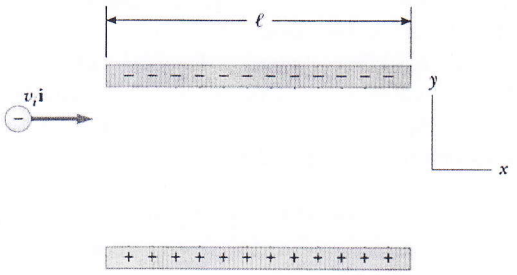
1. In a parallel circuit, the total circuit resistance is always greater than the smallest resistance ( ).
2. The capacitance of a single isolated spherical conductor with radius **R** is proportional to $\mathbf{R^2}$ ( ).
3. The electric field at a point in space is defined as the electric force acting on a negative test charge placed at that point divided by the magnitude of the test charge ( ).
4. A charged capacitor stores **10 C** at **40 V**. Its stored energy is **400 J** ( ).
5. The equivalent capacitance for a parallel combination is always less than any individual capacitance in the combination ( ).
6. For a series combination of ***n*** resistors, the potential difference over each resistor must be the same ( ).
7. The number of electric filed lines drawn is proportional to the magnitude of the charge that created the electric field ( ).
8. Electric charge is conserved and quantized ( ).
9. The electric field lines must begin on a negative charge and terminate on a positive charge ( ).
10. Ohm's law is related to a linear relationship between current density and electric filed ( ).

Question (III): Answer all the following problems: **(22 Marks)**

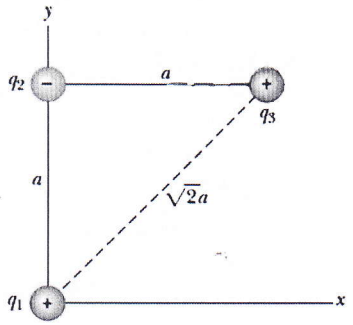
1. Consider three capacitors having a capacitance of **3 μF**, **6 μF** and **12 μF**. Find their equivalent capacitance if they are connected: **(a)** in parallel **(b)** in series. **(4 Marks)**

2. Find the capacitance of a parallel-plate capacitor that has an area $A = 2\times10^{-4}\ m^2$ and a plate separations **(a)** d =**1 mm**, and **(b)** d = **3 mm**. **(4 Marks)**

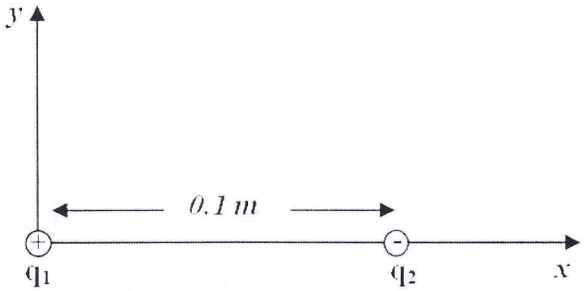
3. An electron enters the region of a uniform electric field, as shown in the figure below, with $v_i = 3\times10^6$ **m/s** and E=**200 N/C**. The horizontal length of the plates is L= **0.1 m**. **(6 Marks)**
   (a) Find the acceleration of the electron while in the electric field.
   (b) Find the time it takes to travel through the region of the electric field.
   (c) What is the vertical displacement *y* of the electron while it is in the electric field.



4. Consider three point charges located at the corners of a right triangle as shown in the figure below, where $q_1=q_3=$**5 μC**, $q_2=$**-2μC**, and a=**0.1 m**.
   Find the **magnitude** of the resultant force exerted on q_3. **(4 Marks)**



5. The figure below shows two charged particles fixed in place. A particle of charge $q_1=$ **+8 μC** at the origin and a particle of charge $q_2=$ **-2 μC** at *x*= **0.1 m** from the origin. At what point can a proton be placed so that the net force on it is zero? **(4 Marks)**



Best Wishes,,,

Assiut University
Faculty of Science
Department of Physics

Term : Fall 2019 - 2020
Date : 26/12/2019
Time : 2 hours

Course Title: General Physics (1) Code: P100 Final Examination (50 %)

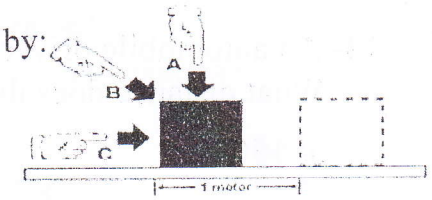
Part I: Choose the correct answer from the following statements: (20 Marks)

1- An action/reaction pair of forces:
a- point in the same direction. b- act on the same object.
c-are always long-range forces. d- act on two different objects

2- When you sit on a chair, the resultant force on you is
a- zero b- up. c- down. d-depending on your weight

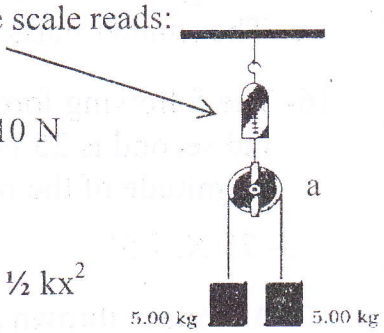
3- A (6 kg) block initially at rest is pulled to the right along a horizontal, frictionless surface by a constant horizontal force. The work done by this force is (36 J). What is the speed of the block after it has moved (3 m)?
a- 3.46 m/s b- 2.76 m/s c- 4.80 m/s d- 1.98 m/s

4- If forces A, B and C are equal, the greatest value of the work done by:
a- force A. b- force B. c- force C.
d- The work is the same for all forces.



5- If both mass and velocity of a ball are increased 3 times, the kinetic energy is increased by a factor of:
a- 3 b- 6 c- 9 d- 27

6- The spring scale is calibrated to measure the weight in Newtons. The system was in equilibrium and the mass of the pulley and the cord is neglected, then the scale reads: ($g=9.8 m/s^2$)
a- 49 N b- 98 N c- Zero d- 10 N



7- The work done by the spring force of constant k and compressed distance x from its equilibrium position is
a- $W = ½ kx$ b- $W = -kx$ c- $W = 2kx^2$ d- $W = ½ kx^2$

8- An object has completed two revolution in a circle of radius 14 cm, its displacement equal.....cm
a- zero b- 28 c- 88 d- 140

9- An object moves 20 m east in 30 s and then returns to its starting point taking an additional 50 s. If west is chosen as the positive direction, what is the average speed of the object?
a- 0.50 m/s b- (- 0.50 m/s) c- 0.73 m/s d- 0 m/s

10- The coordinate of an object is given as a function of time by $x = 7t - 3t^2$, where x is in meters and t is in seconds. Its average velocity over the interval from t = 0 to t = 4 s is:
a- 5m/s b- (-5m/s) c- 11m/s d-(-11m/s)

11- The apparent weight of a person standing in an elevator which is moving down with uniform acceleration will be:

a-Same as the weight on the surface of the earth

b- Less than its weight on the surface of the earth

c-Twice the weight on the surface of the earth

d- Greater than its weight on the surface of the earth

12- A truck moves 70 m east, then moves 120 m west, and finally moves east again a distance of 90 m. If east is chosen as the positive direction, what is the truck's resultant displacement?

a- 40 m b- (-40) m c- 280 m d- -280 m

13- In one-dimensional motion where the direction is indicated by a plus or minus sign, the average velocity of an object has which of the following properties?

a- It is positive.

b- It is negative.

c-It is zero.

d- It can be positive, negative, or zero

14- An automobile driver puts on the brakes and decelerates from 30 m/s to zero in 10s. What distance does the car travel?

a- 150 m b- 196 m c- 336 m d- 392 m

15 - Two objects of different mass are released simultaneously from the top of a 20-m tower and fall to the ground. If air resistance is negligible, which statement best applies?

a- The greater mass hits the ground first.

b - Both objects hit the ground together.

c- The smaller mass hits the ground first.

d- No correct answer

16- The following force vectors act on objects: one is 50 Newton at 45° north of east and second is 25 Newton at 30° south of east. Which of the following represents the magnitude of the resultant and its angle relative to the easterly direction?

a- 75 N, 7.5° b- 61.4 N ,21.8° c- 23.4 N ,18.3° d- 12.8 N ,37.5°

17- A stone is thrown at an angle of 30° above the horizontal from the top edge of a cliff with an initial speed of 12 m/s. A stop watch measures the stone's trajectory time from top of cliff to bottom to be 5.6 sec. What is the height of the cliff? ($g=9.8 m/s^2$)

a-58 m b- 154 m c- 120 m d- 197 m

18- If we know an object is moving at constant velocity, we may assume:

a-the net force acting on the object is zero.

b- the object is losing mass

c- the object is accelerating

d- there are no forces acting on the object

19- A thrown stone hits a window, but doesn't break it. Instead it reverses direction and ends up on the ground below the window. In this case, we know:

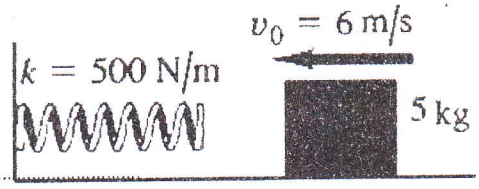
a- the force of the stone on the glass > the force of the glass on the stone.
b- the force of the stone on the glass = the force of the glass on the stone.
c- the force of the stone on the glass < the force of the glass on the stone.
d- the stone didn't slow down as it broke the glass.

20- As a car goes up a hill, there is a force of friction between the road and the tires rolling on the road. The maximum force of friction is equal to:

a- the weight of the car times the coefficient of kinetic friction.
b- the normal force of the road times the coefficient of kinetic friction.
c- the normal force of the road times the coefficient of static friction.
d- zero.

Part II: Solve the following problems then circle one appropriate answer: (30 Marks)

1- A 5.00-kg block is moving at v_o = 6.00 m/s along a frictionless, horizontal surface toward a spring with force constant k = 500 N/m that is attached to a wall as shown in figure below. The spring has negligible mass. (a) **Find** the maximum distance the spring will be compressed;
(b) If the spring is to compress by no more than 0.150 m, **What** should be the maximum value of v_o?
(c) **Calculate** the kinetic energy loss.

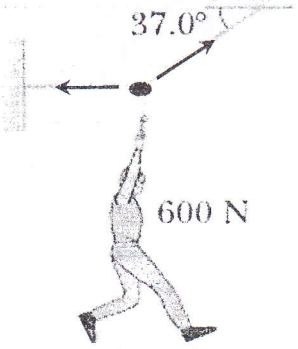


2- Consider the displacement vector $\vec{A}= (3\hat{\imath}+4\hat{\jmath})$ m , $\vec{B}= (2\hat{\imath}-8\hat{\jmath})$ and $\vec{C}= (-3\hat{\imath}+3\hat{\jmath})$ m.

a) Determine the **magnitude** and **the direction** of the vector $\vec{D}= \vec{A}+ \vec{B}+ \vec{C}$

b) Determine the **magnitude** and **the direction** of the vector $\vec{D}= \vec{A} . (\vec{B}- \vec{C})$

3- a) **Find** the tension in each cable supporting the 600-N cat burglar in figure below.
b) Suppose the horizontal cable were reattached higher up on the wall.
Would the tension in the other cable increase, decrease, or stay the same? Why?

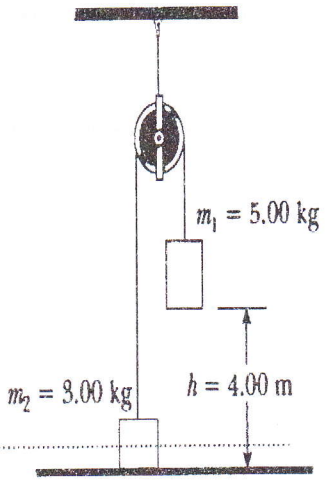


4- Two objects are connected by a light string passing over a light frictionless pulley as shown in figure. The object of mass 5 kg is released from rest.

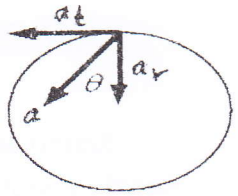
Using the principle of conservation of energy,

a) **determine** the speed of the 3 kg object just as the 5kg object hits the ground.

b) **Find** the maximum height to which the 3 kg object rises. ($g = 9.8\ m/sec^2$)



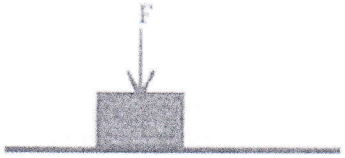
5- A race car starts from rest on a circular track. The car increases its speed at a constant rate (a_t) as it goes once around the track.
Find the angle that the total acceleration of the car makes with the radius connecting the center of the track and the car at the moment the car completes the circle.

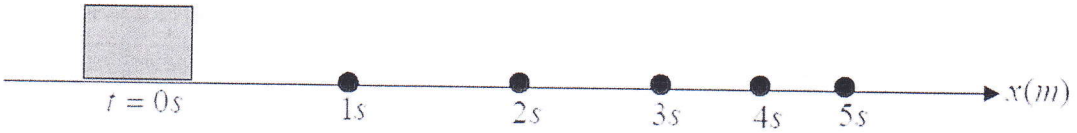


Question finished
With our Best regards

Assiut University **Faculty of Science** **Department of Physics** **Course Title: General Physics (1)**		**Term: Fall 2019 – 2020** **Date: 09/01/2020** **Time: 2 hours** **Final Examination (50 %)**

Part I: Choose the correct answer for the following statements: **(20 Marks)**

1- Areas always have dimensions ____ while volumes always have dimensions ____.			
a. m^2, m^3	b. L^2, L^3	c. Both a and b are correct.	d. No answer is correct
2- A block of mass m is resting on a flat surface while an applied force pushes down on it as shown in figure below, normal force (N) exerted by the surface on the block is:			
			
a. N=F+mg	b. N=F-mg	c. zero	d. N=mg
3- The slope of the curve in the position versus time graph for a particle's motion is:			
a. The particle's instantaneous speed.	b. The particle's instantaneous acceleration.	c. The particle's instantaneous velocity.	d. The particle's average velocity.
4- A bird, accelerating from rest at a constant rate, experiences a displacement of 28 m in 11 s. What is the average velocity?			
a. 1.7 m/s	b. 2.5 m/s	c. 3.4 m/s	d. zero
5- A European sports car dealer claims that his product will accelerate at a constant rate from rest to a speed of 100 km/hr in 8.00 s. What is the speed after the first 5.00 s of acceleration?			
a. 34.7 m/s	b. 44.4 m/s	c. 28.7 m/s	d. 17.4 m/s
6- A constant force F pushes an object, initially at rest, across a frictionless floor for a time t, resulting in a final speed of v for the object. If the force F is doubled, the time required to reach the same final speed v is:			
a. 2 t	b. 4 t	c. t/2	d. t/4
7- A rock is thrown straight up with an initial velocity of 19.6 m/s. What time interval elapses between the rock's being thrown and its return to the original launch point?			
a. 4.00 s	b. 5.00 s	c. 8.00 s	d. 10.0 s
8- An object of mass m and another object of mass 2m are each forced to move along a circle of radius 1 m at a constant speed of 1 m/s. The magnitudes of their accelerations are:.			
a. equal	b. in the ratio of $\sqrt{2}$: 1	c. in the ratio of 2 : 1	d. zero
9- The following force vectors act on an object: i) 50.0 newtons at 45.0° north of east and ii) 25.0 newtons at 30.0° south of east. Which of the following represents the magnitude of the resultant and its angle relative to the easterly direction?			
a. 75.0 newtons 7.50°	b. 61.4 newtons 21.8°	c. 23.4 newtons 18.3°	d. 12.8 newtons 37.5°
10- A stone is thrown with an initial speed of 15 m/s at an angle of 53° above the horizontal from the top of a 35 m building. If $g = 9.8$ m/s^2 and air resistance is negligible, then what is the magnitude of the vertical velocity component of the rock as it hits the ground?			
a. 9.0 m/s	b. 18 m/s	c. 26 m/s	d. 29 m/s

11- The apparent weight of a fish in an elevator is greatest when the elevator			
a. moves downward at constant velocity	b. moves upward at constant velocity.	c. accelerates downward	d. accelerates upward.
12- Doug hits a hockey puck, giving it an initial velocity of 6.0 m/s. If the coefficient of kinetic friction between ice and puck is 0.050, how far will the puck slide before stopping?			
a. 19 m	b. 25 m	c. 37 m	d. 57 m
13- Two vectors lying in the xy plane are given by the equations A = 5i + 2j and B = 2i – 3j, then A x B equals:			
a. 19k.	b. 11k.	c. -19k.	d. 11k.
14- The net force acting on a 6.0-kg object is given by $F_x = (10 - x)$ N, where F_x is in newtons and x is in meters. How much work is done on the object as it moves from x = 0 to x = 10 m?			
a. 100 J	b. 75 J	c. 50 J	d. 25 J
15- When a projectile reaches its maximum height, the magnitude of its acceleration (m/s2) is			
a. 0	b. 4.9	c. 9.8	d. 19.6
16- An object is moving on a straight line, as shown in the figure. Its position is shown on the line every one second. What is the direction of the net force acting on the object?			
			
a. To the right	b. To the left	c. Up	d. Down
17- Which of the following bodies has the largest kinetic energy?			
a. Mass 3m and speed v	b. Mass 3m and speed 2v	c. Mass 2m and speed 3v	d. Mass m and speed 4v
18- A block of mass m is pulled at constant velocity along a rough horizontal floor by an applied force T make an angle θ with horizontal. The magnitude of the frictional force is:			
a. T cos θ	b. T sin θ	c. mg	d. mg cos θ
19- The vector (− A) is			
a. greater than A in magnitude	b. less than A in magnitude	c. in the same direction as A	d. in the direction opposite to A
20- A force of 1N is:			
a. 1 kg/s	b. 1 kg · m/s	c. 1 kg · m/s^2	d. 1 kg · m^2/s

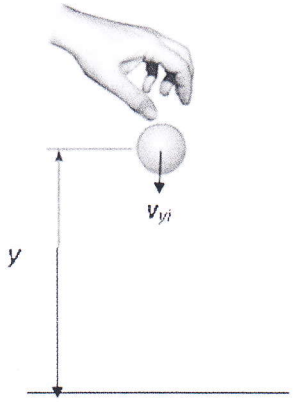
Part II: Solve the following 5 problems: (30 Marks)

1. A fundamental law of motion states that the acceleration of an object is directly proportional to the resultant force exerted on the object and inversely proportional to its mass. If the proportionality constant is defined to have no dimensions, determine the dimensions of force. (b) The newton is the SI unit of force. According to the results for (a), how can you express a force having units of newtons using the fundamental units of mass, length, and time?

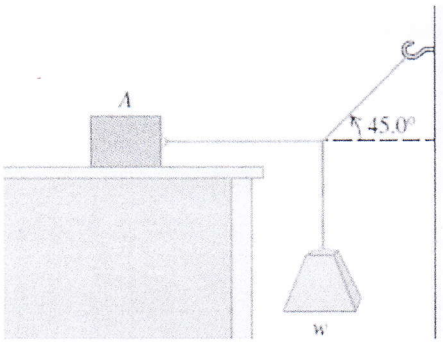
2. A rock is thrown downward from an unknown height (y) above the ground with an initial speed of v_{yi} = 10 m/s. It strikes the ground 3 s later.

a) Determine the initial height (y) of the rock above the ground?

b) Determine the speed of the rock just before it strikes the ground?



3. Block A in figure below weighs 60.0 N. The coefficient of static friction between the block and the surface on which it rests is 0.25. The weight w is 12.0 N and the system is in equilibrium. (a) Find the friction force exerted on block A. (b) Find the maximum weight w for which the system will remain in equilibrium.



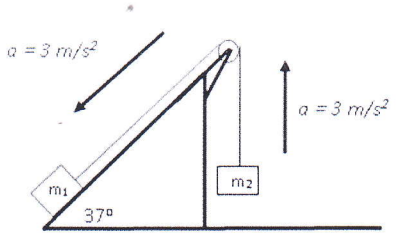
4. When a 4 kg mass is hung vertically on a spring that obeys Hooke's law, the spring stretches 2.5 cm. If the 4 kg mass is removed, How far will the spring stretch if a 1.5 kg mass is hung on it?

5. The mass $m_1 = 10$ kg is connected (through a massless string passing over a frictionless pulley) to a second mass m_2 as shown in the figure. The surface is frictionless. If the magnitude and direction of the acceleration of the system are as shown in the figure, then

a) Draw the free body diagrams for both masses (m_1 and m_2)?

b) Calculate the tension in the string (T)?

c) Find the unknown mass (m2)?



End of Questions

With best wishes

Assiut University		Term : Spring 2019 - 2020
Faculty of Science		Date December 26 , 2019
Department of Physics		Time: 2 Hours

Course Title: General Physics (1) – Phys100 – Final Examination (50 %)

Constants: acceleration due to gravity $g = 9.8\ m/s^2$ vertically downward.

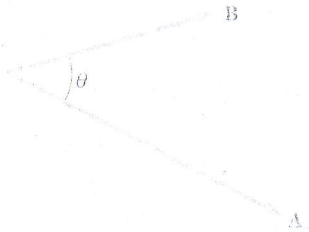
Question #1: Circle the correct answer for the following questions: (10 Marks)

1. The **dimensions** of the **Work** are:
   - *a.* MLT^{-2}
   - *b.* $ML^{-1}T^{-2}$
   - *c.* $ML^{-2}T^{-2}$
   - *d.* $ML^{2}T^{-2}$

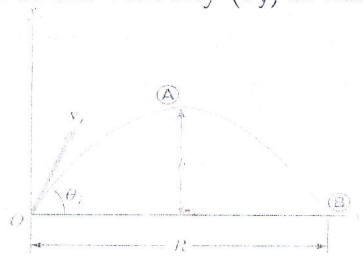
2. If **A** and **B** are two vector starting from the same origin, **the angle** θ between them is

   a. $\cos^{-1}\left(\frac{\vec{A}\cdot\vec{B}}{|A||B|}\right)$ *b.* $\sin^{-1}\left(\frac{\vec{A}\cdot\vec{B}}{|A||B|}\right)$

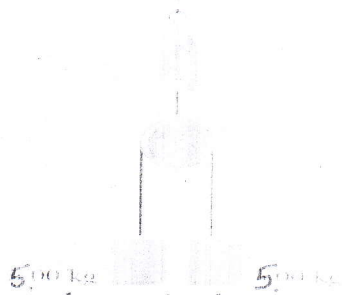
   c. $\tan^{-1}\left(\frac{\vec{A}\cdot\vec{B}}{|A||B|}\right)$ *d.* $\cot^{-1}\left(\frac{\vec{A}\cdot\vec{B}}{|A||B|}\right)$



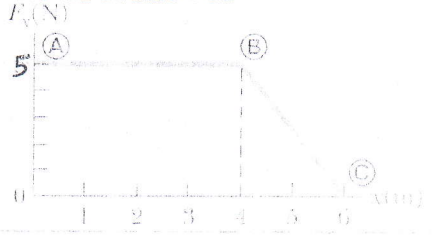
3. At which point of the trajectory, the **vertical** component of the velocity (v_y) is zero
   - *a.* Point A
   - *b.* Point B
   - *c.* Points A and B
   - *d.* Points O and B



4. The spring scale is calibrated to measure the weight in Newtons. The system was in equilibrium and the mass of the pulley and the cord are neglected (considered zero), then the scale reads:
   - *a. 49 N*
   - *b. 98 N*
   - *c. Zero*
   - *d. 10 N*

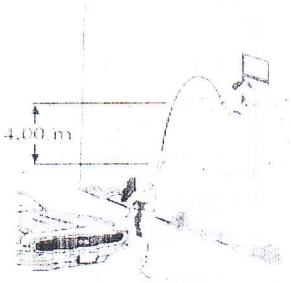


5. A particle is subjected to a force F_x that varies with position as shown in the figure below. The **work done** by the force on the particle as it moves from $x = 0$ *to* $x = 6\ m$ is:
   - *a.* 5 *J*
   - *b.* 20 *J*
   - *c.* 25 *J*
   - *d.* -25*J*



Question #2: (10 Marks)

A student throws a set of keys vertically upward to another student in a window **4m** above as shown in the figure. The keys are caught **1.5s** later by the student.

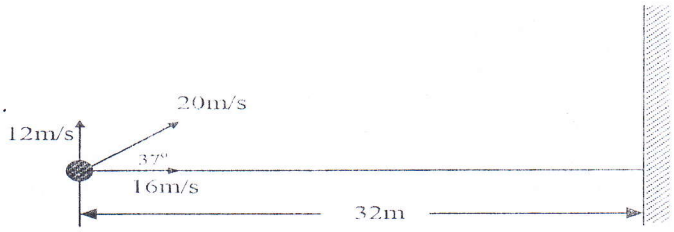


a) With what initial velocity were the keys thrown?.

b) What was the velocity of the keys just before they were caught?.

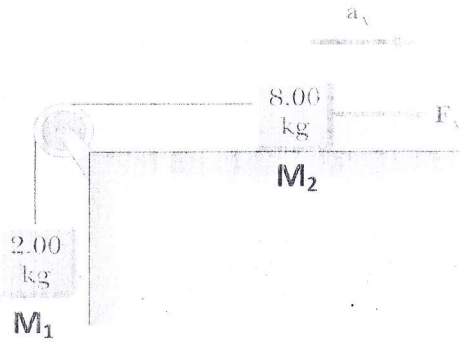
Question #3: (10 Marks)

Suppose that the object had been thrown upward at an angle of **37°** to the horizontal with a velocity of **20m/s**. *Where* will the ball hit the wall?.



Question #4: (10 Marks)

Assume that all surfaces are frictionless, and if $F_x = 40\ N$, $M_1 = 2\ kg$ and $M_2 = 8\ kg$.

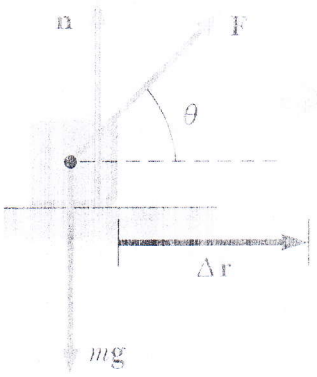


a) Draw the free body diagrams of M_1 and M_2?.

b) What is the acceleration (a) of the system and *tension* (T) in the string connecting M_1 and M_2?.

Question #5: (10 Marks)

A *5.0 kg* object is pulled **to the right** along a horizontal surface at a constant speed by a force $F = 15\ N$ acting *20°* above the horizontal. Note the free body diagram of this object and answer the following questions.



a) *Calculate* the magnitude of normal force (*n*)?.

b) How much work is done by the force *F* as the object moves *6.0m?.*

c) Does the work done by the normal force as the object moves *6.0 m* equal **Zero** (*Yes* or *No*)? *Why*?.

***** Good Luck*****

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