

تعداد سؤال: ۱۵ تکمیلی - تشریحی ۴

نام درس: زبان تخصصی

رشته تحصیلی: گرایش: فیزیک

کد درس: ۲۱۱۲۹۱

زمان امتحان: تئوری و تکمیلی ۲۵ دقیقه تشریحی ۴۰ دقیقه

[ استفاده از فرهنگ لغات مجاز نیست. ☆ سوالات تئوری نمره منفی دارد ]

تعداد کل صفحات: ۳

نیمسال دوم ۸۲-۸۳

## Fill in the blanks with the best word or phrase

- A thermostat can ..... the flow of hot water in a car's cooling system.  
a. diffuse                      b. evolve                      c. detect                      d. regulate
- The word physics comes from a Greek term meaning ..... and therefore physics should be a science dedicated to the study of all natural phenomena.  
a. natural                      b. nature                      c. motion                      d. mutual interaction
- His speech was so ..... that even his enemies accepted that he was right.  
a. important                      b. discerning                      c. impressive                      d. complicate
- Real objects are ..... of a large number of particles held together by forces acting among them.  
a. make up                      b. figure out                      c. bring out                      d. compound
- The fundamental SI standard of mass, the kilogram, was ..... in 1901.  
a. derived                      b. adopted                      c. conform to                      d. take place
- There are many ..... to this question, let's discuss each one by one.  
a. facet                      b. quantity                      c. information                      d. component
- According to the Aristotelian view that dominated ..... ideas about motion, all objects can move only if some force causes the motion to occur.  
a. net                      b. subject                      c. phenomenon                      d. medieval
- The earth ..... on its axis as it moves through space about the sun.  
a. rotation                      b. rotates                      c. rotated                      d. rotational
- If we push or pull an object, we are ..... a force on it .  
a. detecting                      b. advancing                      c. exerting                      d. exciting
- Although there are many kinds of forces in nature, the effects of any force are described ..... by three general laws of motion first stated fully by sir Isaac Newton.  
a. arbitrarily                      b. accurately                      c. potentially                      d. reciprocally

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نیمسال دوم ۸۲-۸۳

11. To make a solution, you can add the fluid to the powder or, ..... the powder to the fluid.  
 a. directly                      b. impressively                      c. specifically                      d. conversely
12. The scientific study of sight and of light in relation to sight is called .....  
 a. optical                      b. optically                      c. optic                      d. optics
13. Newton gave the first explanation of the intervals between successive high tides, and he also ..... for their height.  
 a. accounted                      b. reversed                      c. revealed                      d. wonder
14. Gravitational, electrical and spring forces are examples of .....  
 a. interactive                      b. transparent                      c. invariable                      d. conservative
15. It is evident that falling objects ..... an acceleration, which we attribute to gravity, the gravitational attraction of the earth .  
 a. wonder                      b. denotes                      c. undergo                      d. specifies

## سوالات تشریحی

سوالات ۱-۴ را به فارسی روان ترجمه کنید.

1. One of the most impressive discoveries was the origin of the energy of the stars, that makes them\* continue to burn. Physics has proved that it is the nuclear "burning" of hydrogen which supplies the energy of the sun; the hydrogen is converted into helium. Furthermore, ultimately, the manufacture of various chemical elements proceeds in the centers of the stars, from hydrogen.
2. A coordinate system moving at a constant velocity relative to an inertial frame is itself\* an inertial frame. To see this\*, consider an observer standing on the ground and another\* in a car moving at a constant velocity. If the two observers measure the velocity of a moving object, their\* measurements will differ by their constant relative velocity. Hence, they\* will agree on whether the motion of the object is accelerated, and Newton's first law will work equally well

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نیمسال دوم ۸۲-۸۳

3. When two objects, one hotter and one colder, are placed in contact, the energy transfer proceeds only for a finite time, When it\* finally stops, we note that neither object is now hotter nor colder than the other, and we say they are in *thermal equilibrium* and are at the same temperature. Whenever two objects are at the same temperature, there will be no net transfer of heat between them \* if they \* are placed in contact.

4. Maxwell showed that these laws were not mathematically consistent when the electric fields were changing in time. However, if one hypothesized that a changing electric field could induce a magnetic field, the inconsistency was removed.