

College of Engineering  
English 123  
BA, LNK, SJH, CEA  
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Student Name \_\_\_\_\_

Section Number \_\_\_\_\_

## Unit 1

	<i>Page</i>
Reading Comprehension.....	2-5
Vocabulary .....	6-8
Grammar.....	9-44
<b>Finite Verbs</b> <b>Verbals</b> <b>Subject - Verb Agreement (Countable and Uncountable Nouns)</b> <b>Action Verbs and Linking Verbs</b> <b>Active and Passive</b> <b>Irregular Verbs</b> <b>Prepositional Phrases</b> <b>Verbal Phrases (Infinitive, Participial, and Gerund)</b> <b>Clauses (Independent and Dependent)</b> <b>Sentences (Simple, Compound, and Complex)</b> <b>Commas</b> <b>Articles</b>	
Writing .....	45-54

ما كان للذئب أن يكون ذنباً  
 لو لم تكن الخراف خرافاً.

## Unit I - Reading 1

## The Many Forms of Energy

ترجمة الكلمات موجودة  
بصفحتي 7، 8

- (1) <sup>1</sup> Energy is the **ability** to do **work**. <sup>2</sup> When a hammer **strikes** a nail, it **exerts** a force on the nail that **causes** it to move. <sup>3</sup> The **movement** of the hammer has the ability to do work and therefore has a form of energy that we call kinetic energy. <sup>4</sup> Kinetic energy is the energy of **motion**.
- (2) <sup>5</sup> An object may have energy not only because of its motion but also because of its **position** or **shape**. <sup>6</sup> For **example**, when a watch spring is wound, it is **storing** energy. <sup>7</sup> When this energy is *released*, **it** will do the work of moving the hands of the watch. <sup>8</sup> This form of energy is called *potential* energy. <sup>9</sup> Potential energy is stored energy. <sup>10</sup> Water in a dam is another example of potential energy.
- (3) <sup>11</sup> There are many types of kinetic and potential energy, including chemical, thermal, mechanical, electrical, and nuclear energy. <sup>12</sup> Chemical energy is potential energy that is stored in gasoline, food, and oil. <sup>13</sup> Just as the watch spring needs to be released to do the work of moving the hands, the energy stored in food molecules needs to be released by enzymes or substances in the body, and the energy stored in gasoline must be released by the spark plug to do its work of **propelling** the car **forward**. <sup>14</sup> Thermal energy may be **defined** as the kinetic energy of molecules. <sup>15</sup> When a substance is heated, the molecules move faster, which causes that substance to feel hot. <sup>16</sup> Mechanical energy is energy related to the movement of objects. <sup>17</sup> Electric energy is energy that is produced by electric charges. <sup>18</sup> Nuclear energy is the energy that is stored in the nucleus of certain kinds of atoms, like uranium.

إذا أردت أن تنتقم ممن أساء إليك بطريقة تجعله يتضاؤل أمام نفسه، اعف عنه.

## Unit 1 - Reading Comprehension

### Reading 1 - The Many Forms of Energy

A. Using the information given in Reading 1, choose the answer that best completes the statements. Write your answers (a, b, c, or d) on the blanks provided.

1. The main idea of the first paragraph is that kinetic energy is \_\_\_\_\_.
  - a) the force that causes nails to move
  - b) the ability of motion to do work**
  - c) the best form of energy
  - d) all of the above
  
2. According to the reading, water in a dam \_\_\_\_\_.
  - a) has potential energy because of its position**
  - b) cannot do work when it is released
  - c) has less stored energy than a watch spring
  - d) all of the above
  
3. According to the reading, food molecules have \_\_\_\_\_ energy.
  - a) electrical
  - b) kinetic
  - c) nuclear
  - d) none of the above**
  
4. It can be concluded from the reading that the movement of a hammer has \_\_\_\_\_ energy.
  - a) potential
  - b) chemical
  - c) mechanical**
  - d) none of the above
  
5. In sentence 7, the word it refers to the \_\_\_\_\_.
  - a) energy**
  - b) nail
  - c) work
  - d) all of the above
  
6. In sentence 1, the word ability means \_\_\_\_\_.
  - a) movement
  - b) nail
  - c) power**
  - d) none of the above

لا تمنعنا أناساً من عبور النهر  
عندما يكون في قاربك مكان.

## Unit I - Reading 2

$$E = mc^2$$

- (1) <sup>1</sup>Energy can be **transformed** from one type to another. <sup>2</sup>For example, an apple hanging on a tree has potential energy, or the energy of position. <sup>3</sup>As it falls, it **loses** potential energy because its height **decreases**. <sup>4</sup>At the same time, **it gains** kinetic energy, or the energy of motion, because its *velocity* **increases**. <sup>5</sup>Potential energy is being transformed into kinetic energy.
- (2) <sup>6</sup>**Frequently**, the **transfer** of energy **involves** a transfer from one **body** to another. <sup>7</sup>When you lift up a rock, you are changing the chemical energy of the food you have eaten into **muscle** energy. <sup>8</sup>As you lift the rock high, your muscle energy is changing into the rock's potential energy.
- (3) <sup>9</sup>When energy is transformed from one type to another or transferred from one **body** to another, no energy is **lost**. <sup>10</sup>When we **measure** energy, we discover that the total amount **remains** intact. Suppose we **prepared**, cooked, and then ate some food. <sup>12</sup>If we were to measure carefully all the energy that remains at the end of this **process** (such as potential, kinetic, and heat), we would always find exactly the same amount of energy as we started with (such as chemical and potential). <sup>13</sup>Energy can thus be **converted** from one form to another but never **created** or **destroyed**. <sup>14</sup>This is called the law of the conservation of energy.
- (4) <sup>15</sup>Matter, like energy, can be converted from one form to another but neither be created nor destroyed. <sup>16</sup>In 1785, the French chemist Antoine Lavoisier **demonstrated** that there is no gain or loss of mass in a chemical change. <sup>17</sup>For example, when a piece of wood is **burned**, ashes remain. <sup>18</sup>At the same time, the wood combines with oxygen in the air to form carbon dioxide and water vapor, which pass into the air. <sup>19</sup>If the carbon dioxide, water vapor, and ashes are added together, the total **weight** will equal the original weight of the wood plus the oxygen in the air. <sup>20</sup>Thus, there is no change in the total **mass**. <sup>21</sup>This is called the law of the conservation of mass.
- (5) <sup>22</sup>Many years later, Albert Einstein **theorized** that the conservation of energy is not **distinct** from the conservation of mass, that is, that there is a **single** law, the law of the conservation of matter and energy. <sup>23</sup>He **predicted** that matter could be changed into energy and **vice versa**. <sup>24</sup>This **concept** was **expressed** in his **famous** equation  $E = mc^2$ , where E **represents** the amount of energy, m is the amount of matter, and c is a **constant** equal to the speed of light.
- (6) <sup>25</sup>Einstein's theory **proved** to be valid in 1939, when it was discovered that **enormous** amounts of energy could be released by **splitting** uranium atoms, a process called fission. <sup>26</sup>When a uranium or plutonium atom is split apart, it gives up neutrons that in turn split other atoms. <sup>27</sup>This **chain reaction** takes place very rapidly and releases a huge amount of energy, **resulting** in the **explosion** of an atomic bomb.
- (7) <sup>28</sup>Although it may seem strange, a process that is the exact **opposite** of fission can also release great quantities of energy. <sup>29</sup>Under **conditions** of intense heat, such as are found at the center of the sun, hydrogen atoms combine to form helium atoms. <sup>30</sup>The transformation of hydrogen into helium is called fusion. <sup>31</sup>When fusion takes place, the hydrogen atoms lose a small amount of mass, which is transferred into energy. <sup>32</sup>Fusion produced on the earth results in a hydrogen bomb, which is much more powerful than the **original** atomic bomb. <sup>33</sup>But the **principle** of fusion can also be used to produce energy for peaceful **purposes** that can **supply** all the needs of the human race for a long time.

Reading 2 -  $E = mc^2$ 

B. Using the information given in Reading 2, choose the answer that best completes the following statements. Write your answers (a, b, c, or d) on the blanks provided.

1. When potential energy changes to another form of energy, then \_\_\_\_\_.

- a) a small amount of energy is destroyed
- b) the new form of energy is stored energy
- c) an atomic bomb will explode
- d) none of the above**

2. In sentence 4, the word **it** refers to the \_\_\_\_\_.

- a) apple**
- b) energy
- c) tree
- d) none of the above

3. In sentence 9, the word **body** means \_\_\_\_\_.

- a) person
- b) object**
- c) energy
- d) all of the above

4. The process of fusion is a process that \_\_\_\_\_.

- a) takes place at the center of the sun
- b) may be used to explode a hydrogen bomb
- c) involves transferring matter into energy
- d) all of the above**

5. According to the reading, an atomic bomb is an example of \_\_\_\_\_.

- a) matter changing into energy**
- b) the destruction of matter
- c) neither fission nor fusion
- d) none of the above

6. Another good title for this reading would be \_\_\_\_\_.

- a) Albert Einstein and the Atomic Bomb
- b) Energy and Nuclear Chain Reactions
- c) The Conservation of Matter and Energy**
- d) all of the above

من الأفضل ألا تكون موجوداً  
على أن تعيش بدناءة.

## Unit 1 Vocabulary

A. Write your answers (a, b, c, or d) on the blanks provided.

1. My hotmail account would not open because I used a password that was not \_\_\_\_\_.

- a) depleted      b) intact      c) intense      **d) valid**

2. The energy produced by a gasoline engine can do the \_\_\_\_\_ of propelling a car.

- a) energy      b) body      c) position      **d) work**

3. An endobiotic organism is an organism that is \_\_\_\_\_.

- a) very large      **b) inside a body**      c) outside a body      d) none of the above

4. Some chemicals are very dangerous because they release poisonous \_\_\_\_\_ into the air.

- a) positions      b) shapes      **c) vapors**      d) laws

5. Mechanical energy may be \_\_\_\_\_ as the kinetic energy of objects.

- a) defined**      b) caused      c) stored      d) heated

6. Water can be \_\_\_\_\_ into steam by heating it to 100° Celsius.

- a) converted**      b) discovered      c) added      d) related

7. A microprobe is \_\_\_\_\_.

- a) a very small probe**      b) a very large probe  
c) the outside of a probe      d) the inside of a probe

الكلمة	المعنى
deplete	يستنزف
intense	كثيف
organism	كائن حي
probe	مسبار، مجس

8. We use grams and kilograms to \_\_\_\_\_ weight.

- a) burn      b) fall      **c) measure**      d) prepare

9. When water is in its solid \_\_\_\_\_, it is called ice.

- a) equation      **b) state**      c) amount      d) motion

10. The \_\_\_\_\_ of up is down.

- a) opposite**      b) together      c) same      d) concept

الشمعة لا تخسر شيئاً حين  
تُشعل شمعة أخرى.

## UNIT 1 VOCABULARY (Chapter 5 – Defining)

1) <b>assume</b>	accept	يفترض
2) <b>conservation</b>	preservation	حفظ، بقاء
3) <b>degenerated</b>	worsened	فسد، ساء
4) <b>degrade</b>	reduce	يخفض، يقلل
5) <b>depleted</b>	used up	مستنزف
6) <b>in disorder</b>	disorganized	غير منظم
7) <b>inexhaustible</b>	endless	بلا نهاية، بدون تعب
8) <b>intact</b>	whole	كامل، كل
9) <b>intense</b>	extreme	ضخم
10) <b>fission</b>	splitting	انفلاق
11) <b>fusion</b>	combination	انصهار، اندماج
12) <b>manifested</b>	shown, indicated	موضح، مبين
13) <b>released</b>	set free	محرر، تم إطلاقه
14) <b>potential</b>	probable	محتمل، كامن
15) <b>proceeded</b>	went forward	تابع، استأنف
16) <b>state</b>	condition	حالة
17) <b>valid</b>	true	صالح، شرعي
18) <b>vapor</b>	steam	بخار
19) <b>velocity</b>	speed	سرعة

## prefixes

1) <b>exto, exo</b>	outside (e.g., exogenous)	خارج
2) <b>endo</b>	inside (e.g., endogenous)	داخل
3) <b>micro</b>	small (e.g., microscopic)	صغير
4) <b>macro</b>	large (e.g., macroscopic)	كبير

امنح الناس دائماً أكثر مما يتوقعون الحصول عليه.

1) <b>ability</b>	قدرة	31) <b>convert</b>	يحول
2) <b>work</b>	شغل	32) <b>create</b>	يخلق
3) <b>strike</b>	يضرب	33) <b>destroy</b>	يهدم
4) <b>exert</b>	يبذل	34) <b>demonstrate</b>	يوضح
5) <b>cause</b>	يسبب	35) <b>burn</b>	يحرق
6) <b>movement</b>	حركة	36) <b>weight</b>	وزن
7) <b>form</b>	شكل	37) <b>mass</b>	كتلة
8) <b>motion</b>	حركة	38) <b>theorize</b>	يبرهن
9) <b>position</b>	موضع	39) <b>distinct</b>	مميز
10) <b>shape</b>	شكل	40) <b>single</b>	مفرد
11) <b>example</b>	مثل	41) <b>predict</b>	يتوقع
12) <b>store</b>	يخزن	42) <b>vice versa</b>	والعكس بالعكس
13) <b>propel</b>	يدفع	43) <b>concept</b>	مبدأ
14) <b>forward</b>	إلى الأمام	44) <b>express</b>	يعبر عن
15) <b>define</b>	يعرف	45) <b>famous</b>	مشهور
16) <b>transform</b>	يحول	46) <b>represent</b>	يعبر عن
17) <b>lose</b>	يفقد، يخسر	47) <b>constant</b>	ثابت
18) <b>decrease</b>	يتناقص، ينقص	48) <b>prove</b>	يبرهن
19) <b>gain</b>	يكتسب	49) <b>enormous</b>	ضخم
20) <b>increase</b>	يزيد، يزداد	50) <b>split</b>	يفلق
21) <b>frequently</b>	بصفة متكررة	51) <b>chain reaction</b>	رد فعل متسلسل
22) <b>transfer</b>	ينقل	52) <b>result</b>	ينتج، نتيجة
23) <b>involve</b>	يشمل، يتضمن	53) <b>explosion</b>	انفجار
24) <b>body</b>	جسم	54) <b>opposite</b>	عكس
25) <b>muscle</b>	عضلة	55) <b>condition</b>	شرط
26) <b>lost</b>	فقد، خسر	56) <b>original</b>	أصلي
27) <b>measure</b>	يقيس	57) <b>principle</b>	مبدأ
28) <b>remain</b>	يبقى	58) <b>purpose</b>	غرض
29) <b>prepare</b>	يعد، يجهز	59) <b>supply</b>	يمد، يزود
30) <b>process</b>	عملية		

إذا قدمت معروفاً لأحد، لا تنتظر  
إيضالاً بعلم الوصول أو خطاب شكر.