



2nd Year Exam of English

Name:

First Semester 2016/2017

Group:

Date: 19-11-2016

Duration: 1h 30

Section One: Reading Comprehension:

A number of composites occur in nature: wood consists of strong and flexible cellulose fibers surrounded and held together by a stiffer material called lignin. Bone is a composite of the strong yet soft protein collagen and the hard, brittle mineral apatite. Yet many modern technologies require materials with unusual combinations of properties that cannot be met by natural composites or the conventional metal alloys, ceramics and polymeric materials. This is especially true for materials that are needed for aerospace, underwater and transportation applications. Aircraft engineers for example, are increasingly searching for structural materials that have low densities, are strong, stiff and resistant to abrasion and impact as well as corrosion a rather impressive combination of characteristics.

The problem is that strong materials frequently are relatively dense, i.e. heavy.

Increasing the strength or stiffness typically results in a decrease in impact strength.

Generally speaking, a composite is considered to be any artificially made multiphase material that shows properties of both constituent phases so that a better combination of properties is realized. The constituent phases in a composite are chemically dissimilar and separated by a distinct interface. Many composite materials are composed of just two phases the one phase being the matrix, which is continuous and surrounds the other phase, which is often called the dispersed phase.

The properties of composites are a function of the properties of the constituent phases, their relative amounts and the geometry of the dispersed phase, which means the shape, particular size, distribution and orientation of the particles.

(From Callister, modified and abridged)

Activity One: Read the text and say whether the following sentences are true (T) or false (F). Justify your answers in both cases. (2 points)

a) New technologies need types of composites that can be found in nature. ()

.....

b) Decreasing the impact strength is the result of the increase in the strength or stiffness. ()

.....

Activity Two: Read the text and answer the following questions (3 points)

1. What are the characteristics of the materials that aircraft engineers are looking for?

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.....
.....

2. What are the natural composites cited in the text?

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.....

3. What is the problem with strong materials?

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.....

Activity Three: (3 points)

1- Find in the text words that are closest in meaning to the following ones:

a- supple (§1) =

b- current (adj) (§1) =

c- characteristics (§3) =

d- rigidity (§2) =

2- Find in the text the opposites of the following:

a- light (adj) (§3) ≠

b- ancient (§1) ≠

Section Two: Language study

Activity One: Put the verbs in the correct tense (present simple or present progressive). (7 points)

1. A typical staff member (**still do**) over 25 hours' overtime every week even though they are told not to.
2. According to today's news, the Chinese stockmarket (**crash**).
3. Only older consumers (**usually buy**)..... our products.
4. As we speak, our stock price (**slip**)..... behind the rest of the market.
5. At this very moment many employees (**think**)..... about quitting.
6. Commercial rents (**grow**) by at least ten percent every single year.
7. Costs (**currently increase**).....
8. Costs of supplies (**climb**) every time that the exchange rate (**drop**).....
9. Hacking attacks (**shoot up**) at the moment.
10. In the present market, wages (**soar**) even though economic growth isn't so high.
11. Many employees (**leave**) in March every year.
12. Our brand image (**get**) worse these days due to some recent scandals.
13. Raw material prices (**rise**) at the present time.

Writing: (5 points)

- Write a twelve-line paragraph about the classification of one of the following and the properties according to which they are classified. (You may choose another classification i.e. one which is not mentioned)

- Elements

- Materials

- Metals.

- Matter