Mansoura University
Faculty of Science
January, 27th, 2010

First year
Time allowed: 2hrs
English Language Exam

Section One: Reading Skills

Read the following passage and then answer the questions that follow:

Carbon is a very special material, and there are atoms of it in many things: for instance the "lead" of a pencil is made of carbon, coal is made of carbon, and so are diamonds. A number of other things such as wood, plants and oil are made very largely of carbon, but have other substances as well. The molecules which make up our bodies depend on carbon.

Carbon atoms are so special because they have the property of joining together into molecules in different ways. For instance the atoms of coal and diamonds are joined together to make crystals, but each in its own patterns, are consequently from carbon atoms come two things so different to look at. A pencil "lead" is also carbon, but here the atoms are arranged not in crystals but in flat sheets, far and too small, of course, to see. When we press a pencil onto a paper, the paper pulls some of the sheets atoms away, and these make the pencil marks. Paper may feel smooth, but it is rough enough to slide off some sheets of atoms. If you try to write on glass and cellophane, your pencil leaves no marks, for these are too smooth to pull the sheets away from the pencil "lead".

Besides forming into crystals and making sheets, carbon atoms can also form into long series of atoms, like chains. No other substance can do this so well. Each chain of carbon atoms can also have other substances attached to the links of the carbon chain. If the carbon chain has hydrogen atoms joined on to it, we have what scientists call a "hydrocarbon". Hydrocarbons give us molecules of oil, petrol, paraffin, tar, and neutral gas, like that found under the North Sea.

Scientists have discovered that carbon chains can be very long, and can contain thousands of both carbon and other atoms. These long carbon chains are single molecules, but much more complicated than the single molecules of water, for instance, which are made of only three atoms (one of oxygen and two of hydrogen). These are the molecules of very complicated substances such as complicated ways. They can also be arranged in rings. The different kinds of oils, such as petrol and paraffin, depends on the way in which the atoms are arranged can make the petrol or paraffin from the oil out of an oil-well by heating it enough to change the pattern of the atoms in its molecules.

The chemist today has found out how to make new substances by heating materials made of hydrocarbon chains, such as oil or coal, in giant pressure cookers and mixing with them other chemicals. When very hot indeed, the atoms of the other chemicals fit into the hydrocarbon chain and combine to make molecules of a new pattern. The result of this may be a plastic for making cups or washing-up bowels, or an artificial fiber for making clothes. Nylon, for example, is a man-made fiber with molecules made out of carbon chains in which atoms of nitrogen, hydrogen, and oxygen fit in a particular arrangements. Milk contains carbon, and the chemist can

extract these and reform them into a plastic for making solid things such as buttons and door handles.

The carbon chain in living things are even more complicated than those in oils, plastics, or artificial fibers, and may contain hundreds of atoms; there is often more than one chain in each molecule, and these may be twisted together like ropes or bundles. It is a difficult problem for the scientist to unravel these complicated molecules, and therefore, although he can make an artificial fiber, has not yet been able to fit the molecules together to make a living plant or animal.

1. Answer the following questions:

a. What is the difference between petrol and paraffin?
b. Why are carbon atoms special?
c. How is hydrocarbon made?
d. Why the pencil doesn't leave marks on glass?
e. How can the scientists make plastic?

2. Read the following sentences and then decide they are True or False:

a. Carbon atoms can join just in one way. ( )
b. Hydrocarbons give us molecules of paraffin only. ( )
c. Milk contains carbon chains. ( )
d. The carbon chains are more complicated in oils, plastics or artificial fibers than those in living things. ( )

3. Complete the following sentences according to the passage:

a. The molecules which make up our bodies depend on_____.
b. When we press a pencil onto paper, the paper pulls some of the_____of_____away.
c. If the carbon chain has hydrogen atoms joined on to it, so we have what is called_____.
d. The chemist has found out how to make new substances by_____ materials made of_____chains.

4. Choose the correct answer:

1- The carbon atoms in the pencil "lead" are arranged in _____.
a. crystals b. chains c. rings d. sheets

2- The chemist can extract the carbon chains which are in_____and reform them into plastic.
a. plants b. oil c. milk d. tar

3- The long carbon chains are single_____.
a. substances b. molecules c. atoms d. chains

4- By_____materials made of hydrocarbon and mixing with other chemicals, the chemist has found the way of making new substances.
a. heating b. coiled up c. joining d. using

5. What do the underlined words refer to?

1. They (paragraph 2) 2. These (paragraph 2)
3. They (paragraph 4) 4. Those (paragraph 6)

Section Two: Language Skills:

1- Put the word in brackets into the correct form. You will have to use prefixes and/or suffixes.

1. He was sitting _____ in his seat on the train. (comfort)
2. The team that he supported were able to win the_____ . (champion)
3. She looked at her _____ in the mirror. (reflect)
4. The bacteria are so small that you need a _____ to see them. (scope)
5. She looked at him _____ , and started to cry. (happy)

2- Give *two* words from the following roots using the needed suffixes or prefixes:

1. Cycle
2. Auto
3. Logy
4. Scope
5. Leg

3- Please provide a conjunction in the following sentences.

1. Either Andrew _____ Peter will help our pastor.
2. Did the team win _____ lose?
3. The team tried hard _____ still lost the game.
4. The police officer spoke politely _____ firmly.
5. The story was long _____ interesting.

Section Three: Writing Skills:

- The value of time.
- Security on the internet.
- The effect of global warming.

Choose one of the above topics to write on. Follow the instructions below:

1- Write *at least* **4** paragraphs
2- Introduction and conclusion *not less than* **5** sentences
3- Body paragraphs *not less than* **8** sentences
4- Show your plan (tree).
5- You must identify the Linking words, if used.

GOOD LUCK