	56	%

AST 6 Final Test 2007-2008

NAME:_____STUDENT ID:_____GROUP:_____DATE:_____

Section A – LISTENING

You will hear a short recording. Answer the questions, complete the gaps and decide whether the sentences are true (T) or false (F). You will hear the recording twice.

ROTARY COMBUSTION ENGINES

1. Decide which of the statements is true or false.

1) A rotary engine is an external combustion engine. T x F
2) The rotary engine uses triangular rotors. T x F
3) Rotary engine has 3 main moving parts. T x F
4) The rotors spin at twice the speed of the input shaft. T x F

2. Fill in the missing words.

In a rotary engine the 7)_____of 8)_____ is contained in a chamber formed by a 9)_____ of the housing and sealed in by one face of the 10) _____rotor.

3. Answer the questions.

5) Why do some aircraft manufacturers prefer rotary engines?

_____

6) How do the rotary engine parts spin?

_____

.

	10

Section B – USE OF ENGLISH

1. Multiplechoice

Read the sentences and choose the best answer.

1) When the driver presses the brake pedal, it pushes down the piston in the master cylinder, _____ pressure in the fluid.

A. creates B. it creating C. creating D. because creating

2) If we _____ as many material as possible, our environment would be better.

A. will recycle B. recycle C. recycled D. had recycled

3) _____ you buy a new monitor, the old computer will never be as good as the new one.

A. Even if B. But C. Even D. Unlike

4) _____ oil is incompressible, the efficiency of the hydraulic system is very good.

A. Thus B. Since C. But D. Therefore

5) A screwdriver is used to _____screws.

A. tightening B. soften C. weakening D. loosen

	5

	56	%

AST 6 Final Test 2007-2008

NAME:_____STUDENT ID:_____GROUP:_____DATE:_____

3. Gap-filling
Fill in the gaps with suitable words from the box. Put the words into the correct form.

make	be	have to	use	recycle	produce	steel	benefit

_____metal _____about 74 percent less energy than _____new steel, according to the Environmental Protection Agency. Recycled steel _____ cheaper as well, since new ore _____be mined to produce it. All steel produced today has at least 25 percent recycled _____ in it, and some products _____entirely from recycled steel. So in addition to the economic and environmental _____, recycling cars is a vital link in the world´s industrial infrastructure.

	8

3. Rephrasing
Rephrase the given sentences so that the meaning remains the same. You may need to put more than one word in a gap.

1) Some gas is vented into the atmosphere to stabilize the pressure.
Pressure_____vented into the atmosphere.

2) Lasers can be used for information recording and reading .
Information_____

3) Gasoline prices keep going up, therefore more customers prefer LPG.
More customers prefer LPG_____

4) If the cost of LPG decreases, LPG powered cars may increase in popularity.
A decrease of cost of LPG may cause _____

5) The lifetime of most machinery depends on good maintenance.
The better _____, the longer_____

	5

4. Questions
Make questions. Ask about the underlined information.

1) FAST enables the designer to understand the <u>functional relationship of the system being designed.</u>
_____

2) The clipings are stored <u>by providing a grass box</u>.
_____

3) The impeller is rotated <u>so that air flow can be achieved</u>.
_____

	6

	56	%

AST 6 Final Test 2007-2008

NAME:_____STUDENT ID:_____GROUP:_____DATE:_____

Section C – READING

Robot Basics

The vast majority of robots do have several qualities in common. First of all, almost all robots have a movable body. Some only have a motorized wheels, and others have dozens of movable segments , typically made of of metal of plastic. Like the bones in your body, the individual segments are connected together with joints. Robots spin wheels and pivot jointed segments with some sort of actuator. Some robots use electric motors and solenoids as actuators; some use a hydraulic system; and some use a pneumatic system. Robots may use all these actuator types.

A robot needs a power source to drive these actuators. Most robots either have a battery or they plug into the wall. Hydraulic robots also need a pump to pressurize the hydraulic fluid , and pneumatic robots need an air compressor or compressed air tanks.

The actuators are all wired to an electrical circuit. The circuit powers electrical motor and solenoid directly, and it activates the hydraulic system by manipulating electrical valves. The valves determine the pressurized fluid´s path through the machine. To move a hydraulic leg, for example, the robot´s controller would open the valve leading from the fluid pump to a piston cylinder attached to that leg. The pressurized fluid would extend the piston, swiveling the leg forward. Typically, in order to move their segments in two directions, robots use pistons that can push both ways.

The robot computer controls everything attached to the circuit. To move the robot, the computer switches on all the necessary motors and valves. Most robots are reprogrammable – to change the robot´s behavior, you simply write a new program to its computer.

Decide if the statements are true or false.

1. Most robots can move their body T x F
2. The robots bodies are driven by joints. T x F
3. The actuators do not have to be wired to an electrical circuit. T x F

Answer the questions.

4. What do robots use as actuators? _____
5. Which parts influence the path of the pressurized fluid through the machine?

_____

6. What is the function of actuators? _____
7. How can you change the robot´s behavior? _____

Find words with the same meaning in the text

8. to compress _____
9. fixed _____
10. a part of a robot _____

	10

	56	%

AST 6 Final Test 2007-2008

NAME:_____STUDENT ID:_____GROUP:_____DATE:_____

Section D – WRITING

Look at the picture below. Imagine you are a designer. Write a paraghaph about our future cars. In your description consider: power, fuel, material, shape and different funcrions of the car.
Minimum: 6 sentences.



Picture from: www.howstuffworks.com

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Evaluation: Grammar ___/4
Vocabulary ___/4
Theme and stylistics ___/4

	12