	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.

SNAKE ROBOTS TO THE SESCUE

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

1) Snake robots move into planes that are dangerous for people to enter. **T** x F
2) Is has 15 water hydraulic motors. T x **F**
3) The Snake's skeleton is made of strong steel. **T** x F
4) The robot is not operated by computer. T x **F**

2. Answer the questions.

5) Where is the camera? _____Snakes head_____
6) What can the robot lift?_____a car_____

3. Fill in the missing words.

The snake has a wide variety of applications: fighting 7) _____fires_____ where humans cannot enter due to 8) _____heat_____or the risk of building collapse, 9) _____underwater_____operation in connection with maintenance or 10) _____instalation_____ .

	10

Section B – USE OF ENGLISH

1. Multiplechoice

Read the sentences and choose the best answer.

1) If we recycle as many materials as possible, our environment _____ better.
A) will be B) would be C) will have been D) would have been

2) Nowadays, designers _____ use many CAD applications.
A) must to B) don't need C) can D) would buy

3) Before the plain takes off, you must _____that your seat belt is fastened.
A) enlarge B) ensure C) be able to D) tighten

4) From 10 a.m. to noon there is _____ decrease in the load.
A) slightly B) slight C) gradually D) steeply

5) Future cars are _____ to have rounded back.
A) likely to B) unlikely C) might D) could

	5

	56	%

AST 6 Final Test 2007-2008

NAME:_____STUDENT ID:_____GROUP:_____DATE:_____

2. Gap-filling

Fill in the gaps with suitable words – fill each gap with ONE word. Use ALL the words from the list below + you have to think of some more. Sometimes you may need to change the grammar form of the words in the list below.

piston	shape	pipe	lubricate	efficiency	friction	apply	transmit

If you _____ a downward force to one piston, then the force _____ to the second piston through the oil in the pipe. Since oil is incompressible the _____ is very good – almost all of the applied force appears at the second _____ . The great thing about hydraulic systems is that the _____ connecting the two cylinders can be any length and _____ .

_____ between our shoes and the floor stop us from slipping.
If you don't _____ your bike regularly with oil, the friction in the chain and axles increases.

	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) If pressure increases in the boiler, the safety valve will open.
Pressure in the boiler increases, _____ the safety valve.

2) Wrist motion is added to most manipulators to increase their flexibility.
Flexibility of most manipulators is increased by_____

3) The load rises sharply.
There is _____

4) The switch is on but the radio does not play.
Although _____

5) Inspection technicians should check the final products to make sure they meet specifications.
In order to meet _____

	5

4. Questions

Make questions. Ask about the underlined information.

1) The car makers already know <u>how to cut drag sharply</u>.
_____

2) Currently a solar powered racing car is made of <u>expensive materials.</u>
_____

3) Lasers can be used for <u>information recording and reading</u> .
_____

	6

	56	%

AST 6 Final Test 2007-2008

NAME:_____STUDENT ID:_____GROUP:_____DATE:_____

Section C – READING

Motorcycles Designed to Run on Air

Jessica Marshall, Discovery News

Aug. 14, 2008 -- We may be driving on air in the next few years. That is, we may be driving vehicles powered by compressed air, instead of gasoline or diesel fuel.

Researchers Yu-Ta Shen and Yean-Ren Hwang of the National Central University in Taiwan have developed an air-powered motorcycle, which uses the energy in compressed air, rather than gas, to drive the motor.

"In Taiwan, air pollution is a very serious problem in the city," Hwang said. Twenty percent of all air pollution comes from motorcycles, he added, especially carbon monoxide and unburned hydrocarbons. These emissions are worse from motorcycles and scooters than cars.

Since the only thing coming out of the new motorcycle's tailpipe is air, large-scale adoption of the new technology could take a big bite out of air pollution in Taiwan, where motorcycles are the most popular form of transportation, or in other places where motorcycles represent a large proportion of traffic.

The motorcycle would still require energy to compress the air needed to power the engine. The amount of pollution associated with that energy will depend on what kind of a power plant provides electricity to the area in question.

The current prototype can hold a little more than two and a half gallons of compressed air, which would carry the bike and driver about three-quarters of a mile.

In the future, the tank size will be increased three to four times, and the maximum pressure the tank can hold will be increased so that the motorcycle could go almost 20 miles without a refill, Hwang said, "which would be adequate for usage in the city. We would need an air compressor to refuel, most likely at a fueling station."

They published their work in the journal *Applied Energy.*

Other air-powered vehicle experts are not convinced that a motorcycle is the best use of the technology.

"We don't think it's a viable product because you're talking about a very, very limited amount of compressed air you can put on a bike," said Shiva Vencat, Executive Vice President of MDI, Inc. in New Paltz, N.Y., and CEO of Zero Pollution Motors, who has licensed MDI's air vehicle technology.

http://dsc.discovery.com/technology/index.html

Decide if the statements are true or false.

1. More than 20% of all air pollution comes from motorcycles. T x **F**
2. The new motorcycles will produce no emissions. **T** x F
3. The new motorcycles will use the energy of compressed gas. T x **F**

Answer the questions.

4. How much compressed air can the prototype hold?_____
5. How many times will the tank size be increase in the future? _____
6. How fat will the driver be able to go withought refill when the tank size is increased? _____
7. What would be used to refill the tank? _____

Find words with the same meaning in the text.

8. exhaust pipe _____ tail pipe_____
9. a factory where electricity is produced _____power plant_____
10. to put more fuel into an aircraft, ship, etc. _____refluel_____

	10

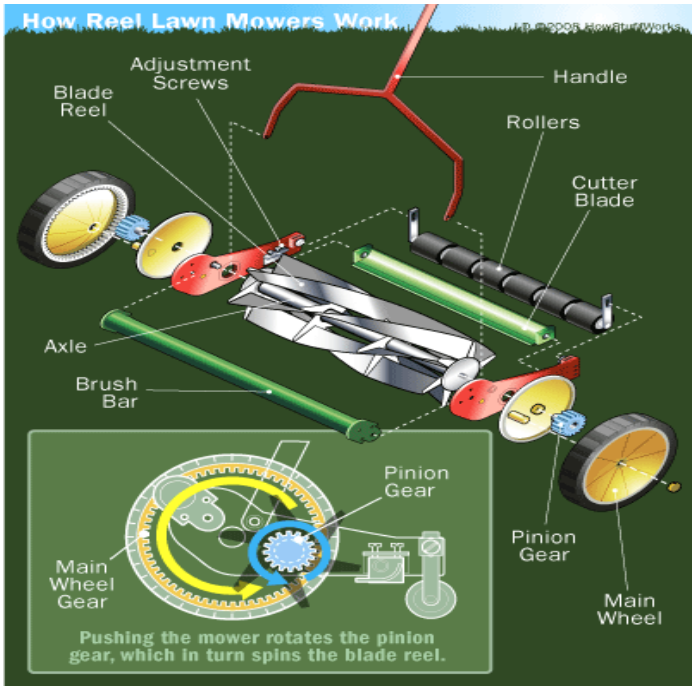
	56	%

AST 6 Final Test 2007-2008

NAME:_____STUDENT ID:_____GROUP:_____DATE:_____

Section D – WRITING

Look at the diagram below and explain how the lawn mower works . You have to write a paragraph in which you should show: sequence of steps, cause and effect relationship, and use appropriate conjunctions. Write minimum 6 sentences.



http://home.howstuffworks.com/reel-mower.htm/printable

	12

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