



Final Exam Moed Alef: English, Trom Basisi

Duration: 2.5 hours

מותר שימוש בכל סוגי המילונים כולל מילונים אלקטרוניים (ללא טלפונים ומחשבים)

מס' ת.ז. : _____

שם הנבחן/נבחנת: _____

YOU MUST ANSWER ALL THE QUESTIONS ON THIS EXAM

CLEARLY & IN PEN!

Fold Everything

1. Almost certainly you have at one time in your life practised origami, even if it was just making a paper airplane. Perhaps it was something more sophisticated like a paper crane. The chances are that as you did it, you reflected on how ingenious this traditional Japanese art is. Animals, boxes, flowers, boats – all can be created from a single square or rectangular sheet of paper simply by folding it – no cutting, no pasting.

2. But did you ever stop to think how the same methods might be applied to develop equipment that could be of real practical use? In fact, origami-inspired creations have already flown in space; in 1995, Japanese engineers launched a satellite with solar panels that folded like a map. And very soon origami engineering may well be seen in a host of other applications.

3. 'It's now mathematically proven that you can actually fold anything,' says physicist Robert J. Lang, who quit his engineering job in California eight years ago to fold things full-time.

Lang, an origami enthusiast since the age of six, advised a well-known car manufacturer on the best way to fold an airbag into a dashboard. He is currently working on a space telescope lens that, if all goes according to plan, should be able to unfold to the size of a football field.

4. At the other end of the scale, researchers are also working on tiny folding devices that could lead to breakthroughs in medicine and computing. These include origami instruments that are put into arteries and open up to keep the blood flowing. Computers of the future are likely to contain tiny, folded motors or capacitors, which will mean faster processing and better memory storage.

5. There's no doubt that saving space has become important in our world, as the search for ever smaller electronic components shows. But origami also meets the demand for things which need to be small when transported and large when they arrive, like the everyday umbrella.

6. Applications for origami engineering go further than many of us might imagine. 'Some day,' says Erik Demaine from MIT*, 'we'll build changeable robots that can fold on their own from one thing into another,' like Transformers. Too much like science fiction to be true? Maybe; though you certainly wouldn't bet against it.

* MIT = Massachusetts Institute of Technology

Questions

1. What is ingenious about origami, according to paragraph 1? (6p.)
 - a. It is used to create animals, boxes, flowers and many other objects.
 - b. It is very sophisticated and difficult to learn.
 - c. It reflects Japanese art and tradition.
 - d. Everything is made from folding a single piece of paper, no cuts or pasting.

2. Which word in paragraph 1 means “thought” (verb)? _____ (4p.)

3. What does the underlined phrase “same methods” in paragraph 2 refer to? (4p.)

4. Which word in paragraph 2 means “very many” _____ (4p.)

5. Origami-inspired creations haven’t had any practical use yet.
- a. This statement is TRUE/FALSE (Circle the correct answer.) (2p.)
 - b. Prove your answer by quoting from paragraph 2. (4p.)
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6. Fill in the blanks with the correct words (one word in each space) according to the context of paragraph 3. Select your answers from the list below. (8p.)

unfolded/unfolding, practice, fold, closed, enthusiastic, current

Physicist Robert J. Lang says it is possible to _____ anything. He is so _____ about this that he even quit his job in order to dedicate his time to folding things. His _____ project is a space telescope lens that, when _____, will be the size of a football field.

7. Who does the underlined word “He” in paragraph 3 refer to? _____ (3p.)

8. Give TWO examples from paragraph 4 of miniature folding inventions. (Write SHORT sentences; do not copy from the text.) (10p.)

a. _____

b. _____

9. What does the underlined word “these” in paragraph 4 refer to? _____ (4p.)

10. Which word in paragraph 4 means “great advancements”? _____ (4p.)

11. According to paragraph 4, computers of the future. (6p.)

- a. are likely to increase in size.
- b. will probably become smaller and faster, inspired by origami engineering.
- c. will be able to store folded components.
- d. are likely to process more important information.

12. Fill in the blanks with the correct words (one word in each space) according to the context of paragraph 5. Select your answers from the list below. (10p.)

important, importance, transportation, shown, transport, however, example

Saving space has great _____ in our world. This is _____ by the search for ever smaller electronic components. Origami, _____, is also useful for things which need to be small when we _____ them, but large when they arrive. A good _____ is the everyday umbrella.

13. Which word in paragraph 5 means “parts”? _____ (4p.)

14. Most of us can predict future uses of origami engineering.

- a. This statement is TRUE/FALSE (Circle the correct answer.) (2p.)
- b. Prove your answer by quoting from paragraph 6. (4p.)

15. Changeable robots (paragraph 6) are an example of. (7p.)

- a. origami engineering already in use.
- b. machines that become smarter.
- c. future possibilities of origami engineering.
- d. future inventions that will certainly improve our lives.

16. The writer believes in the future of origami engineering, even though it seems a little imaginary.

- a. This statement is TRUE/FALSE (Circle the correct answer.) (2p.)
 - b. Prove your answer by quoting from paragraph 6. (4p.)
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17. The purpose of the text is to. (8p.)

- a. discuss the history of origami art in Japan.
- b. illustrate the breakthroughs in medicine due to origami engineering.
- c. demonstrate the effect of origami on our lives.
- d. show how origami engineering transforms our present and future.