

Reading Comprehension Passage 15

This sample text has been prepared for the Master of Electrical Engineering entrance exam by Alpha Consulting Group.

Micro electromechanical systems (MEMS) is the technology of very small mechanical devices driven by electricity. MEMS are separate and distinct from the hypothetical vision of molecular nanotechnology or molecular electronics. MEMS are made up of components between 1 to 100 micrometers in size and MEMS devices generally range in size from 20 micrometers to a millimeter. They usually consist of a central unit that processes data, the microprocessor and several components that interact with the outside such as micro sensors. At these size scales, the standard constructs of classical physics are not always useful. Because of the large surface area to volume ratio of MEMS, surface effects such as electrostatics and wetting dominate volume effects such as inertia or thermal mass.

The potential of very small machines was appreciated before the technology existed that could make them but MEMS became practical once they could be fabricated using modified semiconductor device fabrication technologies, normally used to make electronics. These include molding and plating, wet etching and dry etching, electro discharge machining, and other technologies capable of manufacturing small devices. An early example of a MEMS device is the resonator. The global market for micro-electromechanical systems includes products such as automobile airbag systems, display systems and inkjet cartridges.

Questions

1- It is inferred from the text that:

- 1) One of the reasons for which MEMS devices are being used in nowadays technology is that it can be implemented using the semiconductor device fabrication technology.
- 2) MEMS devices and electronic devices should be fabricated completely separately and independently.
- 3) MEMS devices were commercially used long before the introduction of electronic integrated devices.
- 4) MEMS devices were originally used for power generation.

2- In the sentence "These include molding and plating,...", what does "These" refer to?

- 1) electronic devices
- 2) MEMS devices
- 3) fabrication technologies
- 4) small machines

3-Which statement is not true about MEMS devices ?

- 1) They can be used to fabricate micro sensors.**
- 2) They are the actual implementation of the hypothetical molecular electronic.**
- 3) Microcontrollers can facilitate the functionality of MEMS device.**
- 4) Compared to classical sensors, new concepts should usually be incorporated in MEMS devices.**

Answers

1 ==> 1

2==> 3

3==> 2