Read the passage below and answer the questions that follow:

**Engineers and Scientists:**

We live in a world that is filled with a wide range of technologies that we use and we take for granted. The speed with which new technologies appear and disappear is constantly increasing. These days many of the gadgets we buy get outdated in a time frame of two to three years. This is a short time frame since many of the technologies in use are robust enough to physically last several years. However, in terms of features and utility, they get outdated much sooner than that. This is also a short time frame relative to how long technologies were used two or three decades ago. An example is the media used to store music. While gramophone records and cassettes lasted decades, DVDs have fast disappeared. Almost any mobile phone or computer purchased these days become obsolete in two to three years.

Behind this vast moving world of technologies, is a worldwide army of scientists and engineers. They are constantly on the prowl for making advances to existing technologies. Many industries, companies, and educational institutions are filled with scientists and engineers. While there may be some similarities in the tasks they are involved in, there are also some differences.

An engineer in an industry setting usually faces several technical trouble shooting challenges. Such challenges, with stiff timelines, require substantial familiarity with information databases, and characterization techniques, to be successfully addressed. Addressing trouble shooting challenges are often based on the selection and use of the best available resources and substitutes. The types of questions the engineer is faced with include questions of the sort:
customers at lower costs and with greater reliability.

A scientist in a university or laboratory setting faces a different kind of challenge. The questions the scientist wishes to answer are:

1) Why is the value of any specific property of a material what it is?
2) What is the fundamental science behind the property?
3) What are the limits, if any, to this property?

Answers to such questions enable one to design new materials and to push the capabilities of existing materials.

Based on the professional setting a materials specialist ends up in, he/she will likely get pulled into one of the above types of activities. However having both - a good feel for the fundamental sciences, as well as an understanding of the engineering approach to relate to the real world, can greatly enhance the value of a materials scientist/engineer to his or her organization.

At the same time, it usually takes considerable experience to fully understand, appreciate, and make use of the linkages between fundamental science and the world of engineering. Experience and systematic studies provide us with the insight to make the connections between the real world inventions and the science behind them. Such insight helps us truly appreciate the contributions of the scientist as well as the engineer in shaping our interactions with the world around us. Such insight, also enables us to take our technical pursuits to greater heights and wider reaches, and hence is desirable.

1) Technologies in use today have life span of decades 1 point

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers: False

2) Engineers aim to reduce the number of parts in a product 1 point

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers: False

3) Industry aims to satisfy its customers with respect to cost and reliability 1 point

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers: True
4) Reproducibility of parts is an important target in industries

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
True

5) Scientists try to determine the root cause of a property of a material

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
True

6) Engineers cannot do scientific work

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

7) Scientists cannot do engineering

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

8) It is useful to have both a good feel for the fundamental sciences, as well as an understanding of the engineering approach

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
True

9) Typically, anyone can quickly and easily understand the relationship between science and engineering

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False
Understanding the relationship between fundamental science and applied engineering is typically useless in most fields.

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False