Research Methodology for Technology

Answer the following questions silently, **on your own**.

Question 1: Which of the following is the best definition of a research methodology for technology?

A The scientific investigation of anything designed by humans.

B A scientific method for engineers.

C The design and investigation of artifacts in context.

D The design and investigation of interactions between artifacts and their context.

A ☐ B ☐ C ☐ D ☐

Question 2: What is a difference between natural science and research within technology?

A Natural science does not cover implementation.

B Scientific research explores technology as if it was a natural phenomena.

C Technology aims to change the world, natural science tries to understand it.

D Technology is for engineers, natural science for scientists.

A ☐ B ☐ C ☐ D ☐

Question 3: Which of the following is not an artifact as defined in the preparation?

A An electric circuit

B A standard for electromagnetic protection of electronic circuits

C An electron

D A Python program

A ☐ B ☐ C ☐ D ☐

Question 4: What is the difference between the engineering cycle and the design cycle?

A The design cycle extends the engineering cycle.

B The engineering cycle also includes the actual implementation of the artifact in the real world.

C The engineering cycle has the same steps as the design cycle, but with less scientific rigor.

D The design cycle aims at evaluating an artifact in context.

A ☐ B ☐ C ☐ D ☐

Question 5: What is another term for *treatment*?

A result

B system implementation

C solution

D artifact

A ☐ B ☐ C ☐ D ☐

Question 6: What is the difference between **evaluation** and **validation**?

A Evaluation is the design-science equivalent to what validation is in natural science.

B Evaluation includes the implementation phase, validation does not.

C They only differ in extend and effort spent. Evaluation is more elaborate than validation.

D Evaluation requires that we observe the artifact in its real-world context, the validation does not.

A ☐ B ☐ C ☐ D ☐

Question 7:

A Knowledge questions are evaluated by the utility to the stakeholder.

B Knowledge questions have a single answer.

C Design problems have a single artifact as result.

D Design problems are evaluated by truth.

A ☐ B ☐ C ☐ D ☐