

QR2 Quiz Summary

The goal of the StellarXplorers Challenge Quizzes is to encourage students to explore the Understanding Space textbook and learn the basics of space operations and planning. The Quizzes for each Qualification Round come from selected chapters of the Understanding Space on-line textbook. Study Guides for each Quiz are available on the StellarXplorers Website under the Competition Tab. The goal of only allowing teams 30 minutes to compete the Quizzes is to encourage teams to explore the textbook prior to taking the Quiz. It is unlikely teams will score well if they wait until they open the Quiz and then try to find the answers in the textbook. We highly recommend teams find the answers to the Study Guide questions prior to the Quiz. It becomes a team management problem to make sure this is accomplished.

Apparently, based on QR2 Quiz results, not many teams place a priority of preparing for the Quizzes. Over $\frac{1}{4}$ of all teams scored 50% or less. Here are the statistics for QR2 Quiz:

Number of Quizzes taken: 137

Average Score: 14.1 out of 20 (70.5%)

Perfect Scores (20/20): 15 (11%)

Near Perfect Scores (19/20): 11 (8%)

50% or less Scores (10 or less correct): 36 (26%)

Low Score: 5 out of 20

There were 4 questions which had less than 50% of teams answer correctly. They are shown below. The correct answer is highlighted in Yellow.

5. A spacecraft sensor system must collect incident radiation and focus it on a detector. The sensor can gather radiation through an aperture either by refraction, reflection, or a combination of the two. How does a camera collect radiation? [Section 12.1]

Refraction

Reflection

A combination of refraction and reflection.

15. As the amount of internal heat and the urgency to remove it increases, an active thermal control system is needed. An example is (are) _____. [Section 13.3]

A heat-conducting metal connected to a radiator

Multi-Layer Insulation (MLI)

Heat pipes

All of the Above

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19. To avoid potential decompression problems during Extravehicular Activity (EVA or spacewalk), astronauts must purge nitrogen from their bodies by pre-breathing pure oxygen for _____ before leaving the spacecraft. [Section 13.4]

30 minutes

1-2 hours

3-4 hours

5-6 hours

20. Different models with different levels of testing are used during systems verification. What type of model is used to verify workmanship? [Section 13.5]

Proto-Flight Model

Qualification Model

Flight Model

CAD Model