

Name: (Answer Key)

Directions: Below is a multiple-choice question based on some of the material covered by the lectures thus far. Choose what you think to be the most correct response from the choices listed, **along with at least a one (1) sentence justification for your answer**. In the case of a question involving math, the calculation can serve as your justification. The question is worth 5 points: 2 for the letter response and 3 for the justification. The quiz is “open-book”, so may consult your textbook and notes, but please work individually. No collaborating with your peers is permitted during the quiz.

WARNING: Please **DO NOT** copy material word for word from sources such as textbooks, a peer’s notes, online references (i.e. Google or Wikipedia), etc in any responses to homework, quiz, or exam questions. Ideas should be expressed in your own words. Not only does this protect you from illegal acts of plagiarism and/or accusations of cheating, but it also aids your future studying by having ideas expressed in a way that you, personally, can best understand. If for some reason you **MUST** quote text from a source in your answer, properly reference your quote.

Question: What property of the hydrogen 21-cm line makes it well-suited to studying the gas content of the entire Milky Way Galaxy?

- A) It is in the radio portion of the spectrum
- B) It is emitted by molecular hydrogen
- C) It comes from supernovae explosions
- D) The radiation is isotropic (same intensity in every direction)

Answer: A