

PRACTICE EXAM

Difficulty: MEDIUM

Questions: 10

Star Deaths Exam

Instructions: Please answer all questions to the best of your ability.

Multiple Choice (4 points each, 40 points total)

Instructions: Choose the best answer for each question.

Question 1: What are stars primarily composed of?

- A) Iron and Nickel
- B) Carbon and Oxygen
- C) Hydrogen and Helium
- D) Gold and Silver

Question 2: What triggers the formation of a protostar?

- A) Nuclear Fusion
- B) Supernova Explosion
- C) Gravitational Collapse of a Nebula
- D) Planetary Nebula Formation

Question 3: What process defines the main sequence stage of a star's life?

- A) Gravitational Collapse
- B) Nuclear Fission
- C) Nuclear Fusion
- D) Iron Core Formation

Question 4: What is a pulsar?

- A) A type of planetary nebula
- B) A red giant star
- C) A highly magnetized, rotating neutron star
- D) A type of black hole

Short Answer (6 points each, 30 points total)

Instructions: Answer each question in 2-3 sentences.

Question 5: Briefly describe the process of nuclear fusion in stars and what is produced from it.

Question 6: Explain why a red giant star eventually forms a planetary nebula.

Question 7: What makes pulsars valuable tools for astronomers?

Problem-Solving (10 points each, 30 points total)

Instructions: Answer each question thoroughly, showing your reasoning.

Question 8: Trace the life cycle of an average star, starting from a stellar nebula and ending with its final stage. Be sure to include each of the important stages that it passes through.

Question 9: Describe the process of a supernova and explain how it leads to the creation of a neutron star. Make sure to include why the core collapses.

Question 10: Explain the connection between star deaths and the existence of elements found on Earth. Give examples of elements that are ONLY found in stars.