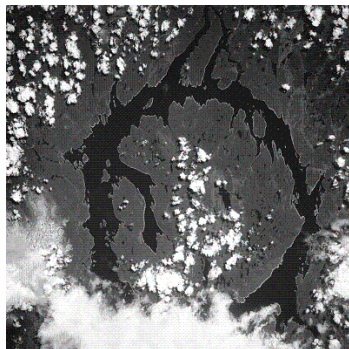


## Grade 9 Science Unit 4 Test

### Multiple Choice (15 marks)

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Which term best describes the Big Dipper?
- asterism
  - constellation
  - galaxy
  - star cluster
- \_\_\_\_\_ 2. Which term refers to Jupiter, Saturn, Uranus, and Neptune?
- ice giants
  - Jovian planets
  - sister planets
  - terrestrial planets
- \_\_\_\_\_ 3. Copernicus and Ptolemy used models to explain the movement of celestial bodies. What was the main difference between their models?
- The Copernican model had the Sun as the centre of the universe.
  - The Copernican model included epicycles for the planets.
  - The model by Ptolemy showed the celestial bodies moving in circles.
  - The model by Ptolemy was used to predict the seasons.
- \_\_\_\_\_ 4. On which planet would you be “oldest?”
- Earth
  - Jupiter
  - Mercury
  - Neptune
- \_\_\_\_\_ 5. A new outer planet has been discovered. Which description would likely be accurate?
- large with gaseous atmospheres
  - large with rocky surfaces
  - small with gaseous atmospheres
  - small with rocky surfaces
- \_\_\_\_\_ 6. Which celestial body is the largest in our solar system?
- Jupiter
  - Neptune
  - Saturn
  - Sun
- \_\_\_\_\_ 7. Which celestial bodies are mostly found in orbit between Mars and Jupiter?
- asteroids
  - clusters
  - comets
  - meteors
- \_\_\_\_\_ 8. Which statement is true about a comet’s tail?
- It always points away from the Sun.
  - It always points in the direction the comet has come from.
  - It always points toward the Sun.
  - It is not affected by direction of travel or by the Sun.
- \_\_\_\_\_ 9. What caused the Manicouagan crater in Quebec?
- an asteroid
  - a dwarf planet
  - a meteorite
  - a meteoroid



- \_\_\_ 10. Which astronaut is Canadian?
- Buzz Aldrin
  - Chuck Yeager
  - Neil Armstrong
  - Roberta Bondar
- \_\_\_ 11. Which statement is true?
- One astronomical unit is equal to about 1 million km.
  - One astronomical unit is greater than one light-year.
  - One light-year is about 9.5 trillion km.
  - One light-year is the distance from Earth to the Sun.
- \_\_\_ 12. Which of the following best describes our solar system?
- It includes all of the bodies in motion around the Sun except asteroids and comets.
  - It includes all of the bodies (such as the planets, moons, and comets) in motion around the Sun.
  - It includes only the planets in motion around the Sun.
  - It includes only those bodies that orbit inside Neptune's orbit.
- \_\_\_ 13. What is the apparent change in the spectrum of an object moving away from Earth called?
- blue shift
  - electromagnetic shift
  - red shift
  - sideways shift
- \_\_\_ 14. What shape is the Milky Way?
- elliptical
  - irregular
  - regular
  - spiral
- \_\_\_ 15. A star that lives for approximately 100 billion years, becomes a red giant and then shrinks into a white dwarf is called:
- High mass star
  - Intermediate mass star
  - Low mass star
  - Our sun

**Completion (10 marks)**

Complete each statement using the word bank below.

Dwarf planet	Nebula	Heliocentric	Rover
Microgravity	Probe	Gravity	Solar wind
Astronomical Unit	Black hole	Thrust	Comet
Celestial body	Geocentric	Light year	Solar flare
Kilometer	Power		

- A natural object observed in space such as a planet or a star is called a \_\_\_\_\_.
- The forward motion of an object and \_\_\_\_\_ result in an elliptical orbit.
- Aristotle introduced the concept of a \_\_\_\_\_ universe with Earth at its centre.
- The force that pushes against a rocket, causing it to move forward is called \_\_\_\_\_.
- While orbiting in the *International Space Station*, a condition known as \_\_\_\_\_ is experienced by all objects in space.
- The space vehicle sent to explore Mars is called a \_\_\_\_\_.
- The material from a collapsed star forms a \_\_\_\_\_, which is so dense that its strong gravitational pull allows nothing to escape.
- A very large cloud of dust and gas in space is likely to be a \_\_\_\_\_.
- The distance from Earth to the Sun is one \_\_\_\_\_.
- Pluto shares many properties with the planets in our solar system, but it is no longer considered a planet. Pluto is now considered a \_\_\_\_\_.

**Short Answer (20 marks)**

24. List Kepler's laws of planetary motion. (3 marks)

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26. Compare terrestrial planets and Jovian planets. (12 marks)

	<b>Terrestrial Planets</b>	<b>Jovian Planets</b>
<b>Size</b>		
<b>Motion</b>		
<b>Composition</b>		
<b>Distance from the Sun</b>		
<b>Temperature</b>		
<b>Density</b>		

27. a) Describe the Stellar Collision theory and the Nebular hypothesis. (4 marks)

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b) Which one is the most likely explanation of the formation of our solar system? (1 mark)

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