Telescopes: Eyes on Space

Name _____ Date _____

Instructions: Read each question carefully and choose the best answer.

1. Which sentence best states what this book is mainly about?

Ⓐ Modern telescopes are becoming increasingly powerful and complicated.

Ⓑ Optical and radio telescopes work differently and have different histories, but both help scientists better understand space.

Ⓒ Optical telescopes gather light from distant objects, and the best ones are becoming smaller and smaller.

Ⓓ Scientists are currently building a new and better space-based telescope to replace the Hubble that will give them new information.

2. Why was Galileo's telescope more useful for viewing objects in space than Lippershey's telescope?

Ⓐ Galileo's telescopes had higher magnification than Lippershey's.

Ⓑ Lippershey's telescopes could only magnify objects on Earth.

Ⓒ Galileo's telescopes had more lenses, so they were more accurate than Lippershey's.

Ⓓ Lippershey's telescopes could not work at night, so they could not view planets and distant stars.

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3. Why would a telescope based on the moon be better than one orbiting in space?

Ⓐ It would be easier for scientists to develop a moon-based telescope than an orbiting one.

Ⓑ It could be more easily sent there from Earth.

Ⓒ It could gather light from closer objects by being based on the moon.

Ⓓ It would have minimal interference to light coming from distant objects in space.

4. By increasing the size of mirrors in reflecting telescopes, scientists are able to _____.

Ⓐ build smaller and smaller telescopes

Ⓑ keep the cost of the new telescopes down

Ⓒ gather light from more and more distant objects

Ⓓ move high-quality telescopes off mountains and into cities

5. What is the section, "How Telescopes Work," mostly about?

Ⓐ reflecting telescopes that use a curved mirror reflect light to a center point

Ⓑ refracting telescopes that have a convex objective lens

Ⓒ the optical telescope

Ⓓ the radio telescope

6. Why are observatories usually built on mountaintops?

Ⓐ It is easier to construct large telescopes on the tops of mountains.

Ⓑ There is less light from cities there, so space objects are clearer.

Ⓒ More land is available on top of mountains.

Ⓓ All of the above

7. If something is **distorted**, it is _____.

Ⓐ constantly in motion

Ⓑ hazy or unclear

Ⓒ brightly lit

Ⓓ powerful

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8. By placing telescopes in space, scientists _____.

Ⓐ eliminate the effect of Earth's atmosphere on images

Ⓑ are able to see objects that were unseen before

Ⓒ have confirmed that there are black holes in space

Ⓓ all of the above

9. Which fact is not true about early telescopes?

Ⓐ Early telescopes relied on curved glass lenses to magnify light.

Ⓑ A major use for early telescopes was to give information about troop movement during war.

Ⓒ Galileo Galilei is known as the father of astronomy because he greatly improved light-gathering telescopes.

Ⓓ Telescopes using mirrors were perfected by Galileo.

10. How are computers critical to radio telescopes?

Ⓐ Computers take unseen information from radio telescopes and make it visible.

Ⓑ Computers enable radio telescopes to find light sources in space that are unseen.

Ⓒ Computers help scientists decide where to locate radio telescopes so they can gather the most light.

Ⓓ Computers help scientists place radio telescopes on the moon for improved amplification.

11. Extended Response: Do reflecting telescopes have advantages over refracting telescopes? Explain.

12. Extended Response: How are radio telescopes different from optical telescopes?

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Quick Check Answer Sheet

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Main Comprehension Skill: Main Idea and Details

1. Ⓑ *Main Idea and Details*
2. Ⓐ *Compare and Contrast*
3. Ⓓ *Compare and Contrast*
4. Ⓒ *Cause and Effect*
5. Ⓐ *Main Idea and Details*
6. Ⓑ *Cause and Effect*
7. Ⓑ *Vocabulary*
8. Ⓓ *Cause and Effect*
9. Ⓓ *Main Idea and Details*
10. Ⓐ *Main Idea and Details*
11. Answers will vary but should include the following: *Reflecting telescopes do have advantages, the most important advantage is that making and polishing a large concave mirror is much easier and less expensive than making a large convex lens for a refracting telescope, mirrors for reflecting telescopes can be made much larger than the lenses used in refracting telescopes, the larger mirrors gather more light,* and so on.
12. Answers will vary but should include ways in which radio telescopes are different from optical telescopes.

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