General Science Practice

Choose one answer per question. Circle A, B, C, or D.

1. Two bar magnets have their north ends facing each other with a small gap between them. What force does each magnet exert on the other?
   A. A repelling force
   B. An attracting force
   C. No force across the gap
   D. A force only on the heavier magnet

2. Which tiny extensions on many plant roots absorb water from the soil?
   A. Flower stalks
   B. Petals
   C. Root hairs
   D. Leaf buds

3. A lamp above and to the left of an opaque toy is the only light near it. In which direction does the toy’s shadow stretch along the table?
   A. To the left of the toy
   B. To the right of the toy
   C. Up toward the lamp
   D. Equally in every direction

4. A shallow tray of water sits in sunshine. Its level falls even though the tray has no leak. Which change explains the falling level?
   A. Some ice becomes liquid water.
   B. Some water vapor becomes liquid water.
   C. Some liquid water becomes ice.
   D. Some liquid water becomes water vapor.

5. Two pure tones travel through the same room. One sounds higher in pitch. Which wave property must be greater for the higher-pitched tone?
   A. Wavelength
   B. Frequency
   C. Travel speed
   D. Amplitude

6. The bowl of a solid metal spoon sits in warm water. Later the handle above the water warms too. What process carries thermal energy along the metal?

A. Conduction
B. Convection
C. Evaporation
D. Condensation

7. A bee visits two flowers of the same species. Which part of its visit counts as pollination?

A. A petal on the first flower opens farther.
B. The bee drinks nectar on the first flower.
C. The bee lands briefly on the second flower's petal.
D. Pollen from the first flower lands on the second flower's stigma.

8. A fictional field report describes long parallel grooves on the exposed bedrock of a valley floor. Which process can create these features?

A. Minerals crystallized as water evaporated.
B. A pool of lava cooled into a layer of new rock.
C. A glacier dragged embedded stones over the bedrock.
D. Fine mud settled on the floor of a still lake.

9. In a backyard sky log, three stars keep the same pattern but appear to move together relative to a stationary roofline over several hours. What mainly explains the shift?

A. Earth rotates on its axis.
B. Earth moves a little closer to the stars in its orbit.
C. All three stars orbit Earth every day.
D. The three stars change their brightness together.

10. A class reports 3 m/s as model train A's average speed for a whole trip. A sensor reads 5 m/s for train B at a single instant. What can the class conclude?

A. Train B covered more total distance than train A.
B. Train B's trip average exceeded train A's by 2 m/s.
C. Train A stayed at or below 3 m/s throughout its trip.
D. Train B reached 5 m/s, but the two trip averages cannot yet be compared.

11. Block A has a mass of 24 g and a volume of 30 cm³. Block B has a mass of 15 g and a volume of 12 cm³. In a model with water density 1 g/cm³ and no surface-tension effects, which blocks float?

A. Both blocks float.
B. Only block B floats.
C. Only block A floats.
D. Both blocks sink.

12. A fictional log records 15 chipmunk visits in 30 minutes at site A and 24 visits in 60 minutes at site B. Which comparison is supported by the records?

A. Site B had the higher observed rate, at 24 versus 15 visits per hour.
B. Site A had the higher observed rate, at 30 versus 24 visits per hour.
C. Both sites recorded 24 visits per hour.
D. Site B had 9 more individual chipmunks than site A.

13. In a fictional record for one lunar day, coast A has highs of 2.0 and 2.0 m and lows of 0.5 and 0.5 m. Coast B has highs of 2.1 and 1.4 m and lows of 0.2 and 0.6 m. Which patterns do the records show?

A. Both are diurnal.
B. A is mixed semidiurnal and B is semidiurnal.
C. Both are semidiurnal.
D. A is semidiurnal and B is mixed semidiurnal.

14. A fictional brightness record dips on days 1.2, 4.7, and 8.2. Assume these are consecutive transits of one planet with a constant orbital period. On which day should the next dip occur?

A. Day 11.7
B. Day 9.4
C. Day 12.9
D. Day 15.2

15. A fictional light sensor reads 80 units at 1 m, 20 at 2 m, and 5 at 4 m. Model R predicts half the reading each time distance doubles. Model S predicts one quarter. Which model matches all three readings, and what does it predict at 8 m?

A. Model S, 2.5 units
B. Model R, 2.5 units
C. Model S, 1.25 units
D. Model R, 1.25 units