Grade 8 Final Review

Short Answer

1. List the six characteristics of living organisms.
2. What are the two ideas in the cell theory?
3. Explain the difference between prokaryotic and eukaryotic cells.
4. Describe the functions of the two structures that only plant cells have.
5. Explain the roles of the following organelles in the production of proteins:
   ribosomes, endoplasmic reticulum, and Golgi apparatus
6. Explain the difference between diffusion and osmosis.
7. Muscle cells have a greater number of mitochondria than other animal cells. Using the function of the mitochondria, explain why this is.
8. Explain how tissues, organs and organ systems are related.
9. Give two beneficial effects of micro-organisms and two harmful effects.
10. Describe the structure of a prokaryotic cells.
11. Explain the steps of infection by a virus in a host cell.
12. List four different types of pathogens and a disease that each causes.
13. Where do antibodies come from and what function do they have?
14. List the steps that occur during inhalation and exhalation. Use the correct terminology.
15. Explain why you sometimes cough while you eat.
16. Why is your heart called a double pump?
17. Describe the components of urine.
18. What are enzymes? Choose two digestive locations and describe the work of enzymes.
19. When liquids are measured, it is important to get an accurate reading of the height of the liquid in the graduated cylinder. Draw a picture or write a paragraph describing the correct method for getting an accurate reading of a liquid.
20. Explain why fire alarms are installed in the ceiling of rooms.
21. Why do ice cubes float? Using the concept of density, write a paragraph explaining your answer.
22. Design a fair test to compare the density of vegetable oil, vinegar, and corn syrup or water.
23. List two methods of measurement that may be used to measure the volume of a substance.
24. Explain how temperature and viscosity are related.

Table 4.1

Solids	Density (g/mL)	Fluids	Density (g/mL)
wood (balsa)	0.12	hydrogen	0.000 089
wood (pine)	0.5	helium	0.000 179
wood (birch)	0.66	air	0.001 29
ice	0.92	oxygen	0.001 43
sugar	1.59	carbon dioxide	0.001 98
salt	2.16	gasoline	0.69
aluminum	2.7	isopropanol	0.79
limestone	3.2	vegetable oil	0.92
iron	7.87	distilled water	1.00
nickel	8.90	seawater	1.03
silver	10.5	glycerol	1.26
lead	11.34	mercury	13.55
gold	19.32		

25. If you were to make a density column by layering rubbing alcohol, vegetable oil, glycerol, and air in the test tube, predict the order the liquids would layer.
26. Define the term *buoyancy*. Give three examples of buoyancy.
27. Examine the headings in the chart below. Under each heading, list three examples of each.

Solid water	Airborne water	Salt water	Fresh water

28. Define the term *deposition*.
29. Define the term *dike*.
30. Define the term *erosion*.
31. What is a *flood plain*?
32. Describe the difference between a polar ice cap and a glacier.
33. Three factors work together to form tides. List these three factors.
34. What is a current? List three ways in which a current can be created.
35. Define the term *arête*.
36. Name three ways by which a tsunami may be created.
37. Define the term *land breeze*.

38. Incandescent light bulbs are not very efficient. Explain why.

39. Explain the difference between luminous and nonluminous objects. Give one example of each.

40. Classify the following materials as transparent, translucent, or opaque.

Item	**Transparent = t, Translucent = tl, Opaque = o**
concrete	
window glass	
coloured glass	
iced tea	
plastic shopping bag	
artificial ice rink	
cloud	
glass marble	
playing card	
stainless steel spoon	

41. Starting with red, list in order the colours produced when white light is split by a triangular prism.

42. Explain why we see different colours.

43. Put the following parts of the electromagnetic spectrum in order from high energy to low energy: X-rays, radio waves, visible light, ultraviolet light, infrared radiation

44. State the two laws of reflection.

45. Using examples, explain the differences between specular reflection and diffuse reflection.

46. How is a reflected ray different than a refracted ray?

47. In which situations below will light be refracted?
    a. moving from air into water along the normal
    b. from air into a diamond at an angle of 34°
    c. from air into a mirror
    d. from air into apple juice at an angle of 25°

48. List the parts of the eye that light passes through before the image gets to the brain.

49. Explain how the optic nerve and the blind spot are related.

50. Give the complementary colours for the following colours:
    red
    green
    yellow
    blue