

Trivia Time Practice Questions ** The questions below were many of the multiple choice questions used for the Trivia Time B and C test at the Indiana State Tournament in 2015 and 2016. I did not add the fill in the blank questions since I am making this year's test all multiple choice.

When I make up a test, about 1/3 of the questions cover topics that almost anyone can get correct, 1/3 involve more middle school and high school knowledge, 1/3 for people who love to learn about science (advanced students). These questions are all original and have been researched to make sure they are correct. The answers are on the last page.

- _____ 1. All matter is made up of small particles called
a. molecules. b. elements. c. atoms. d. electrons.
- _____ 2. What particles of matter are close together, but still able to slide past each other?
a. solids b. liquids c. gases d. plasma
- _____ 3. The Earth is the ___ planet from the sun.
a. second b. third c. fourth d. fifth
- _____ 4. A bird stalks, captures and eats a caterpillar. The bird is a ___ and the caterpillar is the _____.
a. predator, prey b. host, parasite c. consumer, producer d. host, prey
- _____ 5. Abiotic factors include all of the following EXCEPT
a. soil fertility. b. annual rainfall. c. diseases in the area. d. average temperature.
- _____ 6. Movement of heat across the vacuum of space is
a. convection. b. radiation. c. conduction. d. potential energy.
- _____ 7. The compass shows the ___ of the Earth.
a. magnetic field b. movement of lithospheric plates c. movement of currents
d. position of iron in the crust
- _____ 8. Which rock type originates in volcanoes?
a. sedimentary b. metamorphic c. igneous d. both b. and c.
- _____ 9. Which organ is used to filter out liquid waste?
a. kidney b. liver c. large intestine d. stomach
- _____ 10. Water evaporates from a lake, condenses into a cloud and comes down as precipitation. What is the next step in the water cycle?
a. percolation b. run off c. absorption d. all of the above

- _____ 11. At sea level, which element is found in the greatest concentration in the atmosphere?
a. nitrogen b. oxygen c. carbon dioxide d. water vapor
- _____ 12. _____ is a short stretch of nucleic acid that codes for a protein.
a. DNA b. A gene c. A chromosome d. RNA
- _____ 13. What is the Indiana state rock?
a. limestone b. sandstone c. coquina d. shale
- _____ 14. _____ is the capacity to do work.
a. Energy b. Power c. Force d. Momentum
- _____ 15. Absolute zero is the temperature where theoretically, all _____ stops.
a. attractive forces between atoms b. molecular motion
c. forces between subatomic particles d. all of the above
- _____ 16. 2.0 kg of liquid is frozen. The volume increases from 1.0 liter to 1.1 liters (10% increase). What is the mass of the liquid?
a. 1.0 kg b. 1.1 kg c. 2.0 kg d. 2.2 kg
- _____ 17. O, B, A, F, G, K, and M are levels of stellar mass and temperature from largest to smallest. Our sun is a _____ class star.
a. B b. F c. G d. M
- _____ 18. Which is the largest of the “gas planets”?
a. Jupiter b. Saturn c. Uranus d. Neptune
- _____ 19. A(n) _____ is an area along the coast where there can be freshwater during low tide and saltwater during high tide.
a. saltmarsh b. estuary c. bay d. inlet
- _____ 20. $6 \text{ O}_2 + \text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 6 \text{ CO}_2 + 6 \text{ H}_2\text{O}$ in the process of _____.
a. cellular respiration b. alcoholic fermentation c. lactic acid fermentation
d. photosynthesis
- _____ 21. A dense molten iron ball is found in the _____ of the Earth.
a. lithospheric plates b. mantle c. core d. crust
- _____ 22. Which of the following is called the “Age of Fishes”?
a. Cambrian b. Permian c. Jurassic d. Holocene
- _____ 23. Which of the following is not a renewable resource?
a. water b. fossil fuels c. wood d. wind

- _____ 24. What specialized connective tissues are used transport nutrients, control temperature, fight infection and remove waste?
a. respiratory b. cartilage c. blood and lymph d. lipids and fats
- _____ 25. Which particles of the following substances are held together the tightest?
a. solids b. liquids c. gases d. solutions
- _____ 26. Which of the following describes how a genetic difference can affect the survival of specific individuals in a population.
a. albino cave creatures b. various dog breeds c. scarab beetles come in various shapes and sizes d. all of these are examples
- _____ 27. Which of the following is the weakest, but exerts its force over the longest distance?
a. strong nuclear force b. weak nuclear force c. gravity d. magnetic force
- _____ 28. What holds celestial bodies in place in the cosmos?
a. velocity of the object b. rotation of the object c. interactions between different objects d. gravity produced by the object and the force exerted on other objects
- _____ 29. Which of the following is a metamorphic rock?
a. coquina b. granite c. marble d. sandstone
- _____ 30. This movement of heat causes ocean currents that move weather patterns.
a. conduction b. convection c. radiation d. absorption
- _____ 31. Which of the following subatomic particles form chemical bonds to make chemical compounds?
a. protons b. neutrons c. electrons d. neutrinos
- _____ 32. A deep sea bacteria gets its energy from
a. elastic potential energy from the pressure of the ocean.
b. chemical potential energy from digesting hydrogen sulfide by chemosynthesis.
c. chemical potential energy from eating other small organisms.
d. elastic potential energy by bouncing from organism to organism until it reaches sunlight.
- _____ 33. Fossils are found in which rocks?
a. Sedimentary b. Metamorphic c. Igneous d. Magma
- _____ 34. The desert is the driest biome. Name the second driest biome.
a. Tundra b. Tropical Dry Forest c. Taiga d. African Savannah
- _____ 35. Which was the first video game developed?
a. Asteroids b. Space Invaders c. Pac-Man d. Pong

- _____ 36. Which of the following shows a situation where one organism benefits from the association and the other is not affected at all.
a. mutualism b. herbivory c. commensalism d. parasitism
- _____ 37. ___ rocks form when minerals or sediment layer and bond together.
a. Sedimentary b. Metamorphic c. Igneous d. Magma
- _____ 38. When cold Canadian air blows across the water of Lake Michigan, it condenses the water into clouds which produces higher than normal snow levels. This produces
a. flooding. b. lake effect snow. c. tornadoes. d. blizzards.
- _____ 39. The slow accumulation of mutations in a population that causes a new species to develop is known as
a. gradualism b. punctuated equilibrium c. cladistics d. artificial selection
- _____ 40. Which of the biological molecules are used to produce short term energy storage, quick energy release in an organism and build plant body parts?
a. proteins b. carbohydrates c. lipids d. nucleic acids
- _____ 41. Dinosaurs first appeared during the Mesozoic Era and the ___ Period.
a. Jurassic b. Cretaceous c. Triassic d. Carboniferous
- _____ 42. ___ occurs when sinking cold air mixes violently with rising warm air to produce this weather system that may or may not include precipitation.
a. Flooding b. Lake effect snow c. Tornadoes d. Blizzards
- _____ 43. Which of these is the newest mountain range formed by a collision of two continents followed by the subduction of one continent under the other which pushes the mountains even higher?
a. Himalayans b. Andes c. Rockies d. Urals
- _____ 44. During WWII, rubber supplies to the Allies were cut off when the Japanese conquered many South Pacific islands. What material was discovered that did not work as a source for artificial rubber, but as a great toy?
a. Super Balls b. Play Doh c. Silly Putty d. Slime
- _____ 45. President Theodore Roosevelt donated his large collection and founded the _____.
a. American Museum of Natural History b. Smithsonian Institution
c. Museum of Science and Industry d. Field Museum of Natural History
- _____ 46. Which of the following would have the most trouble living in a drought situation?
a. a salamander b. a cactus c. a kangaroo rat d. a sidewinder rattlesnake

- _____ 47. A plant such as clover is called a(n) ____ because they make their own food while a rabbit is called a(n) ____ because they eat other organisms.
a. heterotroph, autotroph b. autotroph, heterotroph c. producer, consumer
d. both b. and c. are correct
- _____ 48. Matter that is made up of only one kind of atom is known as
a. molecules. b. elements. c. ionic compounds. d. ions.
- _____ 49. Which state of matter is the most common in the universe?
a. solids b. liquids c. gases d. plasma
- _____ 50. Jupiter is known as a(n) ____ planet.
a. small rocky b. gas giant c. exoplanet d. giant rocky
- _____ 51. A(n) ____ is one that will outcompete the native species and take over the area.

a. invasive species b. killer species c. weed species d. both a. and c.
- _____ 52. Biotic factors include all of the following EXCEPT
a. available water. b. predators. c. diseases in the area. d. mates.
- _____ 53. Movement of heat through a fluid is known as
a. convection. b. radiation. c. conduction. d. potential energy.
- _____ 54. Sunspots will affect communication waves because they produce ____ that can make it through Earth's atmosphere.
a. magnetic fields b. Van Allen radiation c. northern lights
d. all of the above
- _____ 55. Which rock type can hold fossil remains?
a. sedimentary b. metamorphic c. igneous d. both b. and c.
- _____ 56. Which organ is used to help cool the body, transport materials and make hormones?
a. kidney b. liver c. heart d. stomach
- _____ 57. The ____ cycle is the only nutrient cycle on Earth that does not require the atmosphere to move nutrients from place to place.
a. water b. nitrogen c. carbon d. phosphorus
- _____ 58. The small dark colored bodies seen in a cell nucleus going into mitosis is/are ____.
a. DNA b. a gene c. a chromosome d. proteins
- _____ 59. What Indiana rock contains energy stored from the sun?
a. uranium b. limestone c. coal d. peat

- _____ 60. What structure(s) most affects the rapid periodic change of depth of water in the ocean basin?
a. the moon b. ocean ships c. climate change d. organisms living in the ocean
- _____ 61. A ball has 300 N of force exerted on it, for 2 minutes but doesn't move. The amount of work done is ___ Joules.
a. 300 Joules b. 600 Joules c. 150 Joules d. 0 Joules
- _____ 62. Which state has the most active volcanoes.
a. Hawa'ii b. Alaska c. Washington d. Wyoming
- _____ 63. Bronze is an alloy that combines copper with ___ produces bells with strength, good tonal qualities and long resonance after the strike.
a. silver b. iron c. zinc d. tin
- _____ 64. How many time zones are found in the United States?
a. 1 b. 4 c. 6 d. 9
- _____ 65. What star is brightest in the Northern Hemisphere?
a. Betelgeuse b. Polaris c. Sirius d. Spica
- _____ 66. The primary producer in the oceans is _____.
a. whales b. phytoplankton c. krill d. thermal vents
- _____ 67. Which of the following is the process by which plants produce carbohydrates and oxygen from carbon dioxide and water.
a. cellular respiration b. alcoholic fermentation c. lactic acid fermentation
d. photosynthesis
- _____ 68. What is the approximate surface temperature of the sun?
a. 3500 K b. 4000 K c. 6000 K d. 10 000 K
- _____ 69. What was the name of the extinction event that wiped out the dinosaurs?
a. "The Great Dying" b. Permian Extinction c. K-T Event d. Dino-death
- _____ 70. The skeleton of an embryonic human is made of
a. bone b. cartilage c. lipoprotein d. tendons
- _____ 71. Which country uses the most nuclear power?
a. the United States b. France c. China d. Russia
- _____ 72. Eventually, our sun will become a before it burns out.
a. pulsar b. blue giant c. white dwarf d. green giant (ho ho ho)

- _____ 73. Which scientist determined that nature determines which traits are successful and can be passed onto the next generation for species survival.
a. Thomas Malthus b. Jean-Baptiste Lamarck c. Jan Baptist van Helmont
d. Charles Darwin
- _____ 73. Which of the following shows a situation where one organism benefits from the association and the other harmed.
a. mutualism b. herbivory c. commensalism d. parasitism
- _____ 75. Which of the following subatomic particles identify the element?
a. protons b. neutrons c. electrons d. neutrinos
- _____ 76. When cold Arctic air blows straight down to the United States, this causes a severe temperature drop. This phenomenon is called
a. gale force winds. b. the polar vortex. c. the chinook. d. the polar express.
- _____ 77. An antibiotic works to destroy bacteria by
a. poisoning the bacteria and causing it to stop metabolizing food.
b. interfering with cellular reproduction so the cell eventually dies without offspring.
c. interferes with the production of a cell wall so it becomes vulnerable to attack.
d. stopping the cell from producing new mitochondria, so the cell can't get energy.
- _____ 78. Nearsightedness is scientifically called?
a. myopia b. hyperopia c. presbyopia d. both b. and c.
- _____ 79. Spring peeper frogs have a small territory it guards jealously, so each frog is distributed throughout the area in a(n) ___ population dispersion pattern.
a. unbalanced b. uniform c. clumped d. random
- _____ 80. Supermassive stars that collapse under their own mass until not even light can escape is known as a ____.
a. quasar b. pulsar c. black hole d. lost cause
- _____ 81. Which grocery company was the first to use bar codes for check out and inventory control?
a. Kroger b. Marsh c. Wal-Mart d. IGA
- _____ 82. Which company made the first true color photographic film for cameras?
a. Edison b. Polaroid-Land c. Nikon d. Eastman-Kodak
- _____ 83. Which of the following indicates a depression in a land form?
a. a solid brown line b. a blue dashed line
c. a brown line with inward pointing hash marks d. black squares

- _____ 84. Indiana plant fossils are mostly found in which rock beds?
a. coal beds b. sandstone beds c. limestone beds d. marble beds
- _____ 85. Who developed the binomial nomenclature naming system using Latin derivatives?
a. Charles Darwin b. Aristotle c. Carolus Linnaeus d. Willi Hennig
- _____ 86. In cladistics, modern birds branched from which group of animals?
a. amphibians b. reptiles c. fish d. mammals
- _____ 87. The coldest place in the universe is the ___ nebula.
a. Boomerang b. Horsehead c. Carina d. Ring
- _____ 88. The first television broadcast was made in the year ____.
a. 1945 b. 1917 c. 1938 d. 1928
- _____ 89. Which type of bridge uses constructed curves with a keystone to hold the road bed?
a. suspension b. arch c. truss d. tension cable
- _____ 90. Which planet(s) have rings?
a. Venus b. Mars c. Uranus d. all of these planets have rings
- _____ 91. Which alternate energy sources are under fire because they have been found to kill migrating birds?
a. concentrating solar power systems b. wind power c. geothermal
d. both a. and b.
- _____ 92. Which of the following snack foods was designed by engineers on a computer?
a. Juice Boxes b. Combos c. Marshmallow Peeps d. Chicken Nuggets
- _____ 93. Living organisms first appeared during which period in Earth's history?
a. Precambrian b. Cambrian c. Permian d. Holocene
- _____ 94. Which of the following is the best example of a robot?
a. an automatic sprinkler b. a heart pacemaker c. a temperature thermostat
d. a child's toy that moves when you switch it on
- _____ 95. What organism lives in the roots of legumes and fixes nitrogen out of the air in order to give legumes nitrogen fertilizer?
a. bacteria b. fungus c. worms d. protists
- _____ 96. Mixing the chemical luminol with an oxidizing agent will make a glow stick light up. This is an example of ___ energy.
a. thermal (heat) b. light c. electrical d. both a. and b.

- _____ 97. Who received the Nobel Prize for the photoelectric effect?
a. Planck b. Pauling c. Einstein d. Fermi
- _____ 98. Which bird has the longest migration of over 25 000 miles annually?
a. Anna's Hummingbird b. Arctic Tern c. Snow Goose d. Peregrine Falcon
- _____ 99. Which type of bridge uses cables hung from arcs of metal lines to hold up the road bed?
a. suspension b. arch c. truss d. tension cable
- _____ 100. The KT event was a mass extinction that killed which large group of organisms?
a. crinoids b. brachiopods c. trilobites d. dinosaurs
- _____ 101. What is the sensitive area under the fingernail that hurts when you tear a nail?
a. cuticle b. quick c. hilum d. hypodermis
- _____ 102. Which planet was the first to have been found to have arcs as well as full rings?
a. Jupiter b. Saturn c. Uranus d. Neptune
- _____ 103. The study of all chemicals containing carbon is ____ chemistry.
a. analytical b. bio- c. organic d. inorganic
- _____ 104. Which company developed the first mass marketed and the first desktop computer?
a. Tandy b. Hewlett Packard/HP c. Apple d. International Business Machines/IBM
- _____ 105. What bond holds the two strands of DNA together in a double helix?
a. peptide bond b. ionic bond c. hydrogen bond d. polar bond
- _____ 106. In which branch of the armed forces was the term "debug" first used to describe repairing a computer?
a. Army b. Navy c. Air Force d. Marine Corps
- _____ 107. Which element has the greatest density?
a. osmium b. iridium c. gold d. lead
- _____ 108. What is the name of the major geologic fault that initiated a massive earthquake in the 1840's that caused the Mississippi River to flow upstream?
a. San Andreas b. Ogallala Aquifer c. St. Louis d. New Madrid
- _____ 109. Which chromosome currently has the most identified genes?
a. 1 b. 2 c. 23-X d. 23-Y
- _____ 110. The first successfully drilled oil well was drilled in which state?
a. Texas b. Pennsylvania c. California d. Oklahoma

- _____ 111. The __ series of hydrogen spectral lines are found in the ultraviolet range.
a. Balmer b. Lyman c. Paschen d. de Broglie
- _____ 112. Which of the following scientists did NOT receive the Nobel Prize for the discovery of the structure of DNA?
a. James Watson b. Francis Crick c. Maurice Wilkins d. Rosalyn Franklin
- _____ 113. Alcor and Mizar are a binary system of stars in which constellation that were used to determine the visual acuity of a Native American Warrior?
a. Orion b. Ursa Major c. Ursa Minor d. Pegasus
- _____ 114. The most common element in the Earth's crust is _____.
a. oxygen b. silicon c. carbon d. aluminum
- _____ 115. The majority of rocks fall under which family?
a. silicates b. carbonates c. sulfates d. phosphates
- _____ 116. DNA polymerase reads the template strand from ____ to build the complementary strand.
a. 3' to 5' b. n terminus to the c terminus c. 5' to 3' d. c terminus to the n terminus
- _____ 117. Who produced the first steam engine?
a. James Watt b. Archimedes c. Hero d. Robert Fulton
- _____ 118. What percentage of energy moves from trophic level to trophic level?
a. 1% b. 10% c. 50% d. 90%
- _____ 119. Which plant tissue is made of tough, fibrous material like nut shells?
a. collenchyma b. parenchyma c. sclerenchyma d. mesenchyma
- _____ 120. The ____ is powerhouse of the cell.
a. ribosome b. Golgi apparatus c. endoplasmic reticulum d. mitochondria
- _____ 121. Which reaction type begins with one reactant forming 2 or more products?
a. synthesis or combination b. decomposition c. single replacement d. double replacement
- _____ 122. The number of waves passing a point in one second is known as the
a. wavelength. b. amplitude. c. origin. d. frequency.
- _____ 123. Who is considered the Father of Genetics?
a. Thomas Hunt Morgan b. Hugo de Vries c. Gregor Mendel d. James Watson

- _____ 124. Which of the following is a metamorphic rock?
a. marble b. coquina c. sandstone d. granite
- _____ 125. The crystalline shape that has sides of equal length and all angles at 90° is
a. rhombic. b. orthorhombic. c. triclinic. d. cubic.
- _____ 126. In a petroleum refinery, the heaviest fraction that is found in the tower is
a. jet fuel b. fuel oil c. asphalt d. kerosene
- _____ 127. $6 \text{ CO}_2 + 6 \text{ H}_2\text{O} \rightarrow 6 \text{ O}_2 + \text{C}_6\text{H}_{12}\text{O}_6$ in the process of _____.
a. cellular respiration b. alcoholic fermentation c. lactic acid fermentation
d. photosynthesis
- _____ 128. What is used in a geologic map to describe a land form depression?
a. hatch marks on the contour lines b. blue contour lines
c. brown contour lines d. dotted lines
- _____ 129. Thomas Edison's first successful incandescent light bulb used a ____ filament that produced light for over 1200 hours before burning out.
a. tungsten b. carbonized bamboo fiber c. platinum wire d. stainless steel
- _____ 130. During the Carboniferous period in Earth's history, examples of this organism were up to a meter wide.
a. sloths b. crabs c. dragonflies d. clams
- _____ 131. Which automobile was the first to run a mile in under 30 seconds (28.2 seconds)?
a. Rolls Royce Silver Ghost b. Haynes Jackrabbit c. Dodge Brothers Charger
d. Stanley Steamer
- _____ 132. Alpha particle radiation can be stopped by a shield made with
a. lead plates. b. aluminum foil. c. a sheet of printer paper.
d. all of the above will stop alpha particles.
- _____ 133. Which of the following bands of the electromagnetic spectrum has uses including quality control in metal manufacturing and airport security?
a. radio waves b. microwaves c. ultraviolet radiation d. x-rays
- _____ 134. Which of the following ions produce the least soluble compounds?
a. sulfates b. group 1A elements like potassium c. halogens like fluorides
d. ammonium compounds
- _____ 135. What was the name of the first manmade probe that left the solar system?
a. Discovery b. Voyager c. Sojourner d. Apollo

- _____ 136. Which of the following is the most common form of gear?
a. worm gear b. hypoid gear c. spur gear d. rack and pinion gear
- _____ 137. Alum (aluminum sulfate) is added to water at the water treatment plant to
a. coagulate and trap suspended sediments and particles.
b. kill bacteria and add vital chemicals for bodily health.
c. combine with other elements to remove bad odors and tastes.
d. increase oxygen absorption to kill bacteria and make water taste better.
- _____ 138. Which country introduced the first high volume, high speed train with average speeds of over 125 mph (217 km/h)?
a. The TGV in France b. The Shinkansen in Japan
c. The InterCity-125 in England d. The Acela Express in the United States
- _____ 139. The first sustained nuclear reaction was produced in the U.S. in 1942. Where was this reaction first produced?
a. The Los Alamos National Laboratory in New Mexico during the Manhattan Project.
b. The Hanford Nuclear Recovery Center in Hanford, Washington.
c. The University of Chicago, under the bleachers at Stagg Field in Chicago, Illinois.
d. The Oak Ridge National Labs in Oak Ridge, Tennessee.
- _____ 140. Who discovered that the pressure above a fluid decreases as the speed of a fluid increases?
a. Pascal b. Archimedes c. Boyle d. Bernoulli
- _____ 141. In term of grain size, what do people in geology or the aggregate business identify a rock between 64 – 256 mm (2.5 – 10.0 inches) in size?
a. gravel b. boulder c. cobble d. pebble
- _____ 142. A diopter measures the optical power of a lens or curved mirror. Optometrists prescribe glasses using a diopter measurement. If you have prescription glasses with a -2.50 diopter, you have
a. myopia. b. hyperopia. c. presbyopia. d. both b. and c.
- _____ 143. A hungry bear weighing 700.0 N walks out on a beam in an attempt to retrieve a basket of food hanging at the end of the beam. The beam is uniform, weighs 200.0 N, and is 6.00 m long; the basket weighs 80.00 N. If the wire can withstand a maximum tension of 900.0 N, what is the maximum distance the bear can walk before the wire breaks?
a. 2.57 m b. 5.14 m c. 3.85 m
d. The wire won't break and Yogi and Boo Boo can have their pic-a-nic!

Answers

1. C	41. C	81. B	121. B
2. B	42. C	82. D	122. B
3. B	43. A	83. C	123. D
4. A	44. C	84. A	124. A
5. C	45. A	85. C	125. D
6. B	46. A	86. B	126. C
7. A	47. D	87. A	127. D
8. D	48. B	88. C	128. A
9. A	49. D	89. B	129. B
10. B	50. B	90. C	130. C
11. A	51. D	91. D	131. D
12. B	52. A	92. B	132. D
13. A	53. A	93. A	133. D
14. A	54. A	94. C	134. A
15. D	55. A	95. A	135. B
16. C	56. C	96. B	136. D
17. C	57. D	97. C	137. A
18. A	58. C	98. B	138. B
19. B	59. C	99. A	139. C
20. A	60. A	100. D	140. D
21. C	61. D	101. B	141. C
22. B	62. B	102. D	142. A
23. B	63. D	103. C	
24. C	64. D	104. D	
25. A	65. C	105. C	
26. D	66. B	106. B	
27. C	67. D	107. A	
28. D	68. C	108. D	
29. D	69. C	109. A	
30. B	70. B	110. B	
31. C	71. A	111. B	
32. B	72. C	112. D	
33. A	73. D	113. B	
34. A	74. D	114. A	
35. D	75. A	115. A	
36. C	76. B	116. C	
37. A	77. C	117. C	
38. B	78. A	118. B	
39. A	79. B	119. C	
40. B	80. C	120. D	