

High School Entrance Exam Reviewer (Science)

Direction: Choose the letter of the best answer.

1. A student conducted an experiment to see the effect of light intensity on the growth of a certain plant. Which could be the independent, dependent, and control variables of his experiment?
 - A. height of the plant, light intensity, weight of the plant
 - B. height of the plant, light intensity, color of light used
 - C. light intensity, height of the plant, the amount of nutrients the plant receives
 - D. light intensity, size of leaves, the size of flower pots used

2. Which Fahrenheit temperature is twice the Celsius temperature?
 - A. $64^{\circ}F$
 - B. $200^{\circ}F$
 - C. $320^{\circ}F$
 - D. $546^{\circ}F$

3. Arrange in increasing order: 1.2 m, 123 cm, 1180 mm
 - A. 1180 mm, 123 cm, 1.2 m
 - B. 1180 mm, 1.2 m, 123 cm
 - C. 1.2 m, 123 cm, 1180 mm
 - D. 1.2 m, 1180 mm, 123 cm

For questions 4 and 5, refer to the table below.

Temperature ($^{\circ}C$)	Volume (mL)
0	56
12	68
67	123
89	145

4. Based on table 1, which is the appropriate conclusion?
- A. Temperature and volume have a direct relationship.
 - B. Temperature and volume have an inverse relationship.
 - C. Both A and B
 - D. Neither A nor B
5. If you are to show the relationship between the temperature and the volume of gas X, which graph best suits your purpose?
- A. bar graph
 - B. pie graph
 - C. pictograph
 - D. line graph
6. In the pulmonary circuit, veins carry oxygen-_____ blood, and in the systemic circuit, veins carry oxygen-_____ blood.
- A. rich, rich
 - B. poor, poor
 - C. rich, poor
 - D. poor, rich
7. Arteries are thicker and more elastic than veins. Why is this so?
- A. Veins return blood to the heart against gravity.
 - B. Arteries contain a greater volume of blood.
 - C. Arteries have less smooth muscles than veins.
 - D. Arteries are under great pressure.
8. Which of the following parts of a neuron is correctly matched?
- A. cell body – short extensions that receive impulses
 - B. axon – conducts nerve impulses
 - C. dendrite – contains the nucleus and other organelles
 - D. nucleus – transmits electric signals
9. Which of the following is not a function of the nervous system?
- A. receive sensory input
 - B. cushion and protect soft tissue
 - C. perform information processing

- D. generate motor output
10. What do inspiration and expiration have in common?
- A. They both use the same pathways.
 - B. The air travels in the same direction in both.
 - C. They both conduct air from the outside.
 - D. They both remove waste from the tissues.
11. Which part of the respiratory system carries out gas exchange?
- A. bronchus
 - B. larynx
 - C. nasal cavity
 - D. lungs
12. When does the reproductive system begin to function fully?
- A. at birth
 - B. before puberty
 - C. when puberty is complete
 - D. when there has been sexual intercourse
13. Which is a necessary condition for the testes to manufacture healthy sperm cells?
- A. Temperature must be below 37 degrees Celsius.
 - B. Temperature must be 37 degrees Celsius.
 - C. Temperature must be above 37 degrees Celsius.
 - D. Temperature must be below 100 degrees Celsius.
14. What is the correct order of the components of the digestive tract?
- A. mouth, esophagus, pharynx, small intestine, stomach, large intestine, rectum, anus
 - B. mouth, pharynx, esophagus, stomach, large intestine, small intestine, rectum, anus
 - C. mouth, pharynx, stomach, esophagus, small intestine, rectum, large intestine, anus
 - D. mouth, pharynx, esophagus, stomach, small intestine, large intestine, rectum, anus
15. Where does absorption occur?
- A. stomach

- B. small intestine
- C. large intestine
- D. liver

16. The difference between weather and climate is

- A. weather is a local phenomenon, climate is regional
- B. weather is a day-to-day phenomenon, climate is a long-term average
- C. weather is the non-scientific term for climate
- D. there is no difference between the two

17. Most of the earthquakes, volcanoes, and mountain belts of the Earth occur

- A. within tectonic plates far from the edges
- B. in ocean basins
- C. at the edges of tectonic plates
- D. at zones where tectonic plates slide horizontally past each other

18. The gravitational attraction between the Moon, Sun, and the Earth will have the greatest effect on the tides of the ocean during a

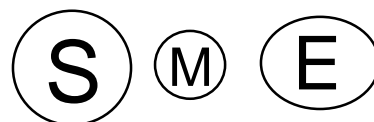
- A. full moon
- B. blue moon
- C. new moon
- D. A and C

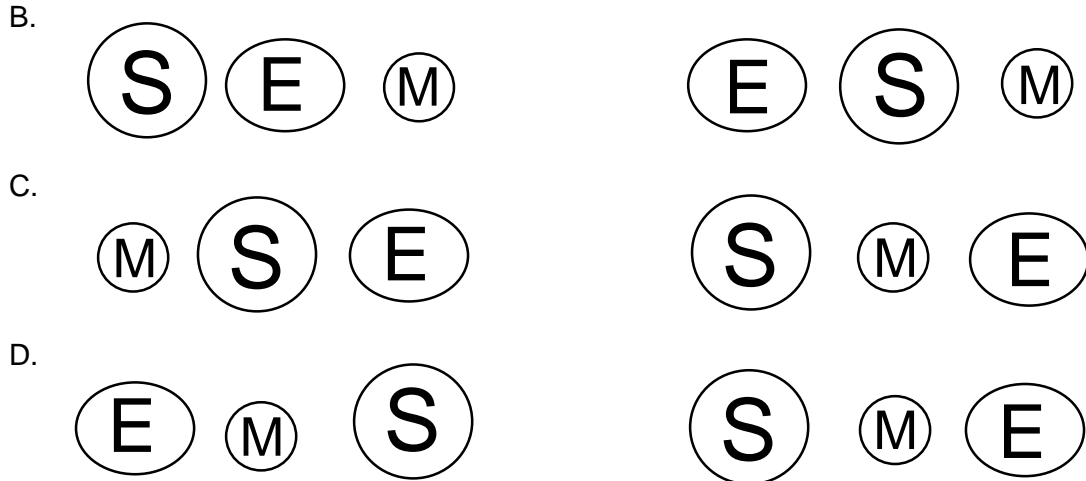
19. Rocks formed from material that melted deep in the Earth and crystallized at or just below the surface are known as

- A. sedimentary rocks
- B. metamorphic rocks
- C. faulted rocks
- D. igneous rocks

20. Which of the following figures shows the correct position of the sun, earth, and the moon in a lunar eclipse and a solar eclipse?

A.





21. The two most abundant elements in the sun are

- A. hydrogen and helium
- B. hydrogen and plutonium
- C. helium and neptunium
- D. helium and uranium

22. What does the milky way look like on the night sky?

- A. A spiral-shaped region of nebulosity.
- B. A pale band of light scattered with stars that stretches across the sky.
- C. A uniform scattering of stars throughout the sky.
- D. The Milky Way is not visible from Earth without a telescope.

23. It is the interaction between abiotic factors and biotic factors of an environment

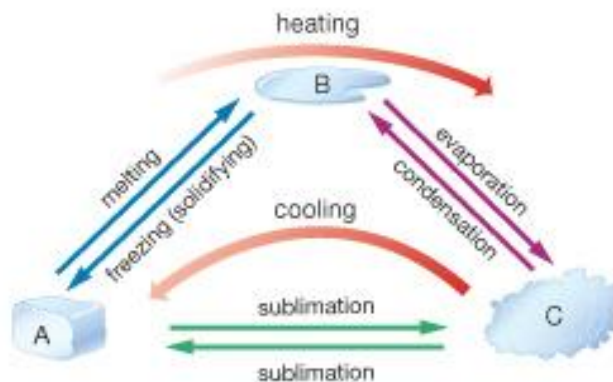
- A. symbiosis
- B. mutualism
- C. ecosystem
- D. commensalism

24. Which star color is the hottest?

- A. red
- B. yellow
- C. blue
- D. orange

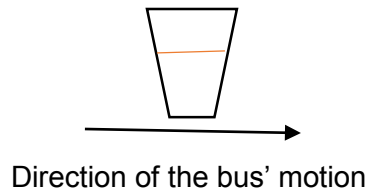
25. Of the following types of interaction, which one is least likely to limit population size?
- A. predation
 - B. commensalism
 - C. competition
 - D. parasitism
26. A food web is more realistic than a food chain for showing the feeding relationships in ecosystems because
- A. it compares the number of consumers to the number of microorganisms in an ecosystem
 - B. food chains use only a small sampling of organisms
 - C. a food web explains why there are more producers than consumers
 - D. producers are usually eaten by many different consumers and most consumers are eaten by more than one predator
27. Which level in the food chain has the highest energy?
- A. producer
 - B. first order consumer
 - C. second order consumer
 - D. third order consumer
28. Which is **NOT** an example of a chemical change?
- A. water turning into ice
 - B. rust forming on an iron nail
 - C. a match burning
 - D. using baking soda and vinegar to simulate a volcanic eruption

For question 29, refer to the diagram below

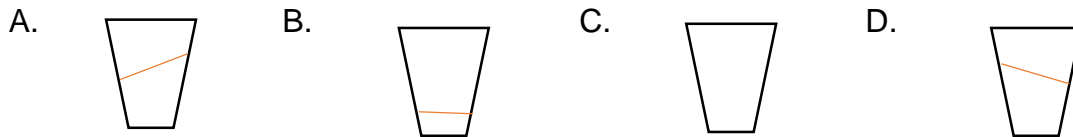


29. Arrange A, B, and C in terms of the distance between molecules (decreasing).
- A. C, A, B
 - B. C, B, A
 - C. A, B, C
 - D. A, C, B
30. Troy once went to the Moon to light a match there, but to his disappointment, it didn't light. Which of the following best explains why the match didn't light?
- A. There is no oxygen in the moon.
 - B. The heat generated by the friction between the match and the matchbox was insufficient
 - C. The moon is a windy heavenly body.
 - D. The moon's atmosphere is too humid for fire to start.
31. Ken left his glass of cold water outside for a few minutes. When he came back, there were water droplets on the glass. Where did the water droplets come from?
- A. from the water inside the glass
 - B. from the glass
 - C. from the air outside the glass
 - D. from the Ken's sweaty palms
32. A ball was released and let to roll on the floor; after some time, it stopped. What was responsible for this?
- A. insufficient kinetic energy
 - B. friction
 - C. too much potential energy
 - D. gravity
33. Car is moving in a circular path at a constant speed, while car B is moving in a straight line at a constant speed also. Which statement is correct about cars A and B?
- A. Cars A and B are not accelerating.
 - B. Car A is accelerating, car B is not.
 - C. Cars A and B are accelerating.
 - D. Car A is not accelerating, car B is.

For question 34, refer to the figure below.



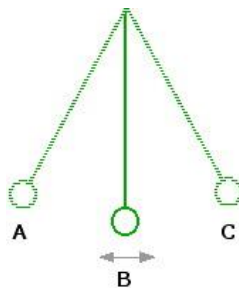
34. Einstein is carrying a glass of raspberry juice when the bus suddenly moves forward. Which of the following diagrams most accurately depicts the raspberry juice during the movement of the bus?



35. A bicycle and a truck are racing against each other with the same speed. They reached the corner of the street at the same time. After that, they have to turn right to reach the finish line which lies just some meters away the corner. Predict which will win.

- A. The bicycle because it has less inertia.
- B. The bicycle because it runs on simpler hinges and pivots.
- C. The truck because it has less inertia.
- D. The truck because it runs on complex machinery.

For question 36, refer to the diagram below.



36. What is the best description of the pendulum as it swings through the point marked B?
- A. minimum kinetic energy; maximum gravitational potential energy
 - B. minimum kinetic energy; minimum gravitational potential energy
 - C. maximum kinetic energy; maximum gravitational potential energy
 - D. maximum kinetic energy; minimum gravitational potential energy
37. In a nuclear power plant, in what order is energy produced and changed from one form to another?
- A. heat energy → nuclear energy → electrical energy
 - B. electrical energy → nuclear energy → heat energy

- C. nuclear energy → heat energy → electrical energy
- D. nuclear energy → electrical energy → heat energy

38. Which form of energy is renewable and does not pollute the Earth's environment?

- A. solar energy
- B. hydroelectric energy
- C. nuclear energy
- D. geothermal energy

39. What energy do gasoline and rocket fuel store?

- A. heat energy
- B. chemical energy
- C. mechanical energy
- D. radiant energy

40. What causes magma to rise to the surface?

- A. Magma is less dense than rock.
- B. Magma is more dense than rock.
- C. The rock forces the magma upward.
- D. A force pulls the magma upward.

41. Which of the following is least likely to be a volcano?

- A. a vent where magma and other volcanic material is erupted
- B. a hill with a crater formed at the site of an eruption
- C. a hill capped by volcanic rocks
- D. a fissure that erupts hot, molten lava

42. What happens when an oceanic plate converges with a continental plate?

- A. The less dense oceanic plate slides under the denser continental plate.
- B. The denser oceanic plate slides under the less dense continental plate.
- C. The denser oceanic plate slides on top of the less dense continental plate.
- D. The less dense oceanic plate slides past the denser continental plate.

43. Seasons are caused by

- A. earth's tilted axis
- B. earth's rotation
- C. the distance between the earth and the sun
- D. the changing weather

44. The Northern Hemisphere experiences _____ when it's tilted _____ the sun.

- A. winter, toward
- B. summer, away from
- C. spring, away from
- D. summer, toward

45. Why doesn't air in the mountains absorb heat as well as air found at sea level?

- A. The atmosphere and air is thinner.
- B. The winds carry all the heat away.
- C. The air is thicker and has more molecules.
- D. The air is made of different kinds of molecules than the air at sea level.

46. Energy produced by the sun reaches the Earth through

- A. convection
- B. convection and radiation
- C. radiation
- D. conduction

47. It is the process that creates energy in the sun.

- A. fission
- B. parallax
- C. blue shift
- D. fusion

48. The North Star, _____, is positioned almost directly over the North Pole.

- A. Betelgeuse
- B. Orion
- C. Sirius
- D. Polaris

49. Why is Venus hot?

- A. because of the volcanoes
- B. because of its closeness to the Sun
- C. because of its position in the solar system
- D. because of the carbon dioxide in the atmosphere

50. Earthquakes are more likely to occur in

- A. every location equally
- B. northern Africa
- C. northern Russia
- D. western South America

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