Astro-Zoology Quiz

Zoology And Space Science · Practice Test · 25 Questions

1. Which animal was the first living creature to orbit the Earth in 1957?

A) A hamster
B) A dog
C) A monkey
D) A cat

2. What is the primary physiological effect of long-term microgravity on the density of animal and human bones?

A) Increased mineral density
B) No change
C) Decreased mineral density
D) Rapid bone regrowth

3. Tardigrades are microscopic animals famous for surviving the vacuum of space. To which phylum do they belong?

A) Tardigrada
B) Arthropoda
C) Nematoda
D) Mollusca

4. In 1973, which species was the first to successfully mate and produce offspring in the microgravity environment of Skylab 3?

A) Fruit flies
B) Laboratory mice
C) Garden spiders
D) Common frogs

5. Which planet in our solar system has a day length that has been studied specifically in relation to the circadian rhythms of biological organisms?

A) Mars
B) Venus
C) Jupiter
D) Saturn

6. What specific type of radiation in space poses the greatest threat to the DNA of biological organisms traveling beyond Earth's magnetic field?

A) Infrared radiation
B) Galactic cosmic rays
C) Visible light
D) Radio waves

7. NASA's 'Bion' satellite missions frequently carried which organisms to study the effects of prolonged space flight on vestibular systems?

A) Honeybees
B) Rats
C) Goldfish
D) Earthworms

8. Which element, essential for all known biological life, is synthesized in the cores of massive stars and dispersed by supernovae?

A) Carbon
B) Helium
C) Neon
D) Argon

9. The study of the potential for life in the universe, which includes the biological requirements of extraterrestrial organisms, is known as:

A) Astrophysics
B) Astrobiology
C) Cosmology
D) Exobiology

10. What unique adaptation allows the tardigrade to survive the radiation levels found in space?

A) High metabolic rate
B) Dormancy through cryptobiosis
C) Photosynthesis
D) Thick fur

11. Which organ in vertebrates is most responsible for sensing gravity and is often studied by space biologists?

A) The vestibular system
B) The liver
C) The pancreas
D) The spleen

12. What was the primary animal subject used by the United States in early suborbital flights to test the effects of g-force on primate physiology?

A) Chimpanzees
B) Lemurs
C) Gibbons
D) Orangutans

13. In space biology, what is the 'fluid shift' effect observed in vertebrates during microgravity?

A) Blood moves toward the head
B) Blood moves toward the feet
C) Blood stops circulating
D) Blood becomes too thick

14. Which moon of Jupiter is considered a primary target for astrobiologists searching for life due to its subsurface liquid water ocean?

A) Io
B) Callisto
C) Europa
D) Ganymede

15. What biological process is severely disrupted in plants and animals when they are removed from Earth's 24-hour light-dark cycle?

A) Circadian rhythm
B) Photosynthesis
C) Thermal regulation
D) Digestion

16. How do spiders, such as those sent to the ISS, adapt their web-spinning behavior in microgravity?

A) They stop spinning
B) They spin thicker webs
C) They spin webs without gravity-dependent orientation
D) They only spin at night

17. Which gas, often monitored in space stations as a byproduct of animal respiration, must be strictly controlled?

A) Carbon dioxide
B) Nitrogen
C) Helium
D) Argon

18. The 'Panspermia' hypothesis suggests that the building blocks of life or life itself arrived on Earth via:

A) Volcanic eruptions
B) Meteorites or comets
C) Solar wind
D) Lightning strikes

19. Which specialized type of bacteria has been studied for its ability to thrive in the harsh, high-radiation environment of the International Space Station?

A) Deinococcus radiodurans
B) E. coli
C) Lactobacillus
D) Streptococcus

20. What is the main challenge for maintaining an 'aquatic' animal population in a spacecraft?

A) The water does not behave like a liquid
B) Surface tension issues with air bubbles
C) Lack of oxygen
D) Too much light

21. What is the effect of spaceflight on the muscle mass of terrestrial animals?

A) Atrophy
B) Hypertrophy
C) No change
D) Rapid growth

22. Which celestial body's magnetic field is critical for protecting the biological organisms on Earth from solar radiation?

A) The Moon
B) The Sun
C) Earth
D) Mars

23. How are biological samples typically preserved for return to Earth from the International Space Station?

A) Freezing or chemical fixation
B) Sun drying
C) Vacuum sealing
D) Heating

24. What is the term for the biological study of how life might evolve on planets with different gravity than Earth?

A) Gravity biology
B) Gravitational adaptation
C) Exophysiology
D) Astro-evolution

25. Which common laboratory animal was sent to space to study the effects of cosmic radiation on reproductive cycles?

A) Fruit fly
B) Guinea pig
C) Frog
D) Crayfish