

**International Science Bee**  
**2024-25 Championships Qualifying Exam for European & African Students**  
**Beta Set Version**



INTERNATIONAL  
Science Bee

Please write your name: \_\_\_\_\_

Please write your birthdate – include the year! \_\_\_\_\_

Please write your school: \_\_\_\_\_

**Instructions:** Circle the answer you believe is correct. Score 2 points for a correct answer. Score 0 points for a question left unanswered. Score 0 points for an incorrect response. **Thus you should answer all questions with your best guess!**

**Qualifying Scores Needed:**

75 Varsity (born on August 31, 2008 or before)

65 Junior Varsity (born between September 1, 2008 - August 31, 2010)

55 Middle School (born between September 1, 2010 - August 31, 2012)

45 Elementary (born on or after September 1, 2012)

Instructions – Mark the letter of the correct answer on the answer sheet or leave it blank. Correct answers are worth 2 points. Incorrect answers are worth 0 points. Questions left blank are worth 0 points.

1. Which of the following animals is native only to Madagascar?

- A. Ring-tailed lemur
- B. Duck-billed platypus
- C. Killer whale
- D. Grey Wolf

2. Which of the following elements is a noble gas?

- A. Fluorine
- B. Phosphorus
- C. Argon
- D. Sulfur

3. Which of the following planets has the fewest moons?

- A. Mercury
- B. Jupiter
- C. Uranus
- D. Saturn

4. Cinder cone, composite, and shield are types of what natural features?

- A. Lakes
- B. Dunes
- C. Volcanoes
- D. Glaciers

5. The letter L denotes what conserved, rotational quantity?

- A. Inertia
- B. Cross product
- C. Force
- D. Angular momentum

6. Which of the following formulas is used to determine the steepness of a line?
- Cosine formula
  - Factorial formula
  - Slope formula
  - Quadratic formula
7. Which part of the cell contains an organism's genetic material?
- Vacuole
  - Nucleus
  - Endoplasmic reticulum
  - Ribosome
8. The Haber-Bosch process synthesizes which of the following inorganic compounds?
- Carboxylic acid
  - Hydrogen sulfide
  - Sulfuric acid
  - Ammonia
9. The Astronomical Unit (AU) is a measure of distance between the Earth and which of the following bodies?
- Polaris
  - Ceres
  - Sun
  - Mars
10. Which of the following is NOT a layer of a tropical rainforest?
- Abyss
  - Emergent layer
  - Canopy
  - Understory
11. Which of the following is NOT yet part of the Standard Model?
- Photon
  - Dark matter
  - Boson
  - Neutrino
12. Which of the following units stores the greatest amount of memory?
- Kilobyte
  - Megabyte
  - Gigabyte
  - Byte
13. All invertebrates lack which of the following anatomical structures?
- Lungs
  - Legs
  - Glands
  - Spinal column
14. A litmus test is used to determine what value of a solution?
- Electronegativity
  - pH
  - Salinity
  - Concentration
15. Which of the following was the first person in space?
- Elon Musk
  - Valentina Tereshkova
  - Neil Armstrong
  - Yuri Gagarin
16. The Geiger-Köppen classification system is based on which of the following measures for an environment?
- Climate
  - Elevation
  - Population
  - Land area
17. Which English physicist wrote the Principia Mathematica and co-discovered calculus?
- Albert Einstein
  - Pierre Curie
  - John Dalton
  - Isaac Newton
18. Which of the following is NOT a conic section?
- Parabola
  - Ellipse
  - Titration
  - Hyperbola
19. Which element is the lightest and has atomic number 1?
- Hydrogen
  - Uranium
  - Iron
  - Helium

20. Which of the following is the SI base unit for temperature?

- A. Rankine
- B. Gram
- C. Fahrenheit
- D. Kelvin

21. The Hertzsprung-Russell (HR) diagram plots temperature against what measure of a star's emitted electromagnetic energy?

- A. Size
- B. Luminosity
- C. Metallicity
- D. Radioactivity

22. With dolomite, which of the following sedimentary rocks primarily composes a karst formation?

- A. Slate
- B. Basalt
- C. Limestone
- D. Sandstone

23. Dia-, Para-, and Ferro- are types of which physical force?

- A. Magnetism
- B. Gravity
- C. Nuclear force
- D. Friction

24. What does a compiler do to computer code?

- A. Compresses data by condensing strings
- B. Translates from one programming language to another
- C. Checks the code for bugs or glitches
- D. Encrypts the code for cybersecurity purposes

25. Which of the following bones in the human body is the longest?

- A. Sternum
- B. Incus
- C. Rib
- D. Femur

26. Which of the following substances is a hydrocarbon?

- A. Vinegar
- B. Propane
- C. Olive oil
- D. Alkaline water

27. What constellation is known as "the small bear"?

- A. Ursa Minor
- B. Orion
- C. Draco
- D. Canis Minor

28. Which of the following is NOT a type of fossil fuel?

- A. Coal
- B. Wind
- C. Natural gas
- D. Oil

29. Which of these trees would be considered a type of conifer?

- A. Oak
- B. Palm
- C. Pine
- D. Maple

30. What is the term in mathematics for a positive integer that is equal to the sum of its proper divisors, other than itself?

- A. Amicable
- B. Perfect
- C. Symmetric
- D. Orthogonal

31. In genetics, what adjective describes a locus that contains different alleles on each chromosome? This is notated with one uppercase and one lowercase letter for that gene.

- A. Heterozygous
- B. Homozygous
- C. Zwitterionic
- D. Recessive

32. Which of these parts of a cell is not found in animals?

- A. Nucleus
- B. Chloroplast
- C. Ribosome
- D. Cell membrane

33. How often does Halley's comet appear in the night sky?

- A. Twice a year
- B. 5 years
- C. 75 years
- D. 1100 years

34. What is the lithosphere?
- The upper layer of the Earth consisting of the crust and upper mantle
  - The layer of the atmosphere that contains the ozone layer
  - The layer of the soil consisting of humus
  - The uppermost layer of the atmosphere
35. Which astronomical body was reduced to dwarf planet status in the Kuiper Belt?
- Phobos
  - Saturn
  - Ceres
  - Pluto
36. Which of these elements is commonly used in computer chips?
- Xenon
  - Mercury
  - Silicon
  - Plutonium
37. Which of the following birds is extinct?
- King penguin
  - Puffin
  - Kiwi
  - Dodo
38. On the periodic table, what single letter that is not found in the English word "tungsten" is the chemical symbol for tungsten?
- L
  - P
  - W
  - Z
39. The intense eruptions of electromagnetic radiation from the Sun are known as what?
- Sun spots
  - Heat waves
  - Solar flares
  - Hurricanes
40. What causes the seasons?
- The Earth's tilted axis
  - The Moon's orbit
  - The Earth's magnetic field
  - Ocean cooling
41. What property of matter is related to Newton's first law of motion?
- Density
  - Inertia
  - Temperature
  - Solubility
42. Which of these polygons is a quadrilateral?
- Dodecahedron
  - Pentagon
  - Trapezoid
  - Triangle
43. What is the lowest of the standard taxonomy of organisms, coming after genus?
- Domain
  - Family
  - Order
  - Species
44. Which of these is a type of igneous rock?
- Xylem
  - Alpha Centauri
  - Emerald
  - Granite
45. Which Italian scientist was made to recant his support of the Copernican theory by the Inquisition?
- Amadeo Avogadro
  - Enrico Fermi
  - Alessandro Volta
  - Galileo Galilei
46. What does the Mohs scale measure?
- A hurricane's wind speed
  - The half-life of an isotope
  - The hardness of a mineral
  - The magnitude of an earthquake
47. Which of these is a subatomic particle?
- Electron
  - Neon
  - Krypton
  - Argon
48. Which laboratory is located on the French-Swiss border, and is home to a particle accelerator?
- Greenwich Observatory
  - McMurdo Station
  - Los Alamos
  - CERN

49. What digestive fluid is secreted by the liver?

- A. Chyme
- B. Bile
- C. Pericardial fluid
- D. Vomit

50. Ozone is an allotropic form of what element?

- A. Oxygen
- B. Gold
- C. Tin
- D. Molybdenum