

The Dawn of Science: Comprehensive Review Test (70 Points)

Instructions: Please choose the best answer for each question.

The Dawn of Science: Comprehensive Review Test

Instructions: Please choose the best answer for each question, match the figures to their contributions, and mark the final statements as True or False.**Section 1: Multiple Choice (46 Questions)**

Thales of Miletus

1. Thales is credited with shifting thought from mythological explanations to:
 - A. religious doctrine
 - B. political theory
 - C. rational inquiry
 - D. inductive guesswork

2. Thales was a pioneer in using which form of reasoning to understand the world?
 - A. Inductive guesswork
 - B. Deductive reasoning
 - C. Mythological inquiry
 - D. Formal logic

3. In a legendary story, Thales calculated the height of the Great Pyramid of Giza by measuring its:
 - A. peak
 - B. shadow
 - C. perimeter
 - D. weight

4. Thales is known for his theorem in what branch of mathematics?
 - A. Trigonometry
 - B. Algebra
 - C. Calculus
 - D. Geometry

Aristotle

5. Aristotle studied under Plato at which famous Athenian school?
 - A. The Stoa
 - B. The Lyceum
 - C. The Museum
 - D. The Academy

6. After returning to Athens, Aristotle founded his own school, the:
 - A. Stoa
 - B. Lyceum
 - C. Museum
 - D. Academy

7. Aristotle is famous for establishing the principles of:
 - A. empirical evidence
 - B. natural history
 - C. formal logic
 - D. mythological stories

8. Who did Aristotle tutor, who later became a famous conqueror?
 - A. King Hiero II
 - B. Alexander the Great
 - C. King Philip II
 - D. General Marcellus

9. Aristotle made vast contributions to which field, creating one of the first known classifications of living things?
 - A. Formal Logic
 - B. Astronomy
 - C. Biology
 - D. Physics

Archimedes

10. Archimedes was a mathematician and engineer from the city of:
 - A. Athens
 - B. Syracuse
 - C. Pergamon
 - D. Rome

11. The Archimedes Principle is best known for explaining:
- A. the angle of a right triangle
 - B. buoyancy and fluid displacement
 - C. planetary shifts
 - D. the motion of celestial bodies
12. During the siege of Syracuse, Archimedes devised war machines, including large claw-like devices used to overturn:
- A. agricultural tools
 - B. Roman vessels
 - C. siege towers
 - D. catapults
13. Archimedes famously developed which device for lifting water?
- A. Water wheel
 - B. Catapult
 - C. Archimedes Screw
 - D. Astrolabe
14. Archimedes was killed during the siege of Syracuse by a soldier from which army?
- A. Persian
 - B. Greek
 - C. Roman
 - D. Egyptian

Zhang Heng

15. Zhang Heng's most famous invention was the world's first instrument capable of detecting the direction of distant seismic activity, known as the:
- A. astrolabe
 - B. water clock
 - C. seismoscope
 - D. armillary sphere
16. What was the purpose of Zhang Heng's invention that released a ball from a dragon's mouth into a toad's mouth?
- A. To light up when the sun rose
 - B. To detect weather changes
 - C. To detect the direction of distant earthquakes
 - D. To predict planetary shifts

17. Zhang Heng served as Chief Astronomer, creating a detailed star map and improving the:

- A. astrolabe
- B. armillary sphere
- C. sundial
- D. telescope

18. What was the name of the Chinese invention used to detect the direction of distant seismic activity?

- A. Kitāb al-Manāzīr
- B. Houfeng Didong Yi
- C. Ordo Virtutum
- D. Causae et Curae

19. Zhang Heng championed scientific methods, advocating for the importance of mathematics and:

- A. Mythology
- B. Classical texts
- C. Military strategy
- D. Mechanics

Galen

20. Galen's medical writings and practices were performed extensively throughout the:

- A. Greek City-States
- B. Persian Empire
- C. Roman Empire
- D. Han Dynasty

21. Galen championed the theory known as the:

- A. germ theory
- B. cellular theory
- C. theory of the four humors
- D. atomic theory

22. Due to legal prohibitions in Rome, much of Galen's anatomical knowledge was based on dissections of animals, primarily:

- A. rabbits and dogs
- B. cattle and horses
- C. pigs and primates
- D. rodents and snakes

23. Galen believed that disease was caused by an imbalance in the:
- A. Planets
 - B. Four Humors
 - C. Blood flow
 - D. Nerves
24. What specific medical experience provided Galen with unparalleled knowledge of human anatomy and trauma?
- A. Serving as personal physician to emperors
 - B. Treating sailors in Alexandria
 - C. Working as a physician for gladiators
 - D. Teaching philosophy in Rome

Hypatia

25. Hypatia was a prominent female philosopher, astronomer, and mathematician who lived in:
- A. Antioch, Syria
 - B. Rome, Italy
 - C. Alexandria, Egypt
 - D. Byzantium
26. Hypatia was the head of the school belonging to which philosophical tradition?
- A. Stoic
 - B. Peripatetic
 - C. Neoplatonist
 - D. Epicurean
27. Hypatia helped her father edit and preserve classical mathematical texts, including Ptolemy's *Almagest* and Euclid's:
- A. *Physica*
 - B. *Elements*
 - C. *Kitāb al-Manāẓir*
 - D. *The Compendious Book*
28. Hypatia's father, Theon, was the last documented head of which famous institution?
- A. The Academy
 - B. The Lyceum
 - C. The Library of Alexandria
 - D. The House of Wisdom

29. Hypatia's primary focus was on philosophy, and which other two fields?

- A. Medicine and Botany
- B. Mathematics and Astronomy
- C. History and Geography
- D. Theology and Music

Al-Khwarizmi

30. Al-Khwarizmi worked at the major Islamic intellectual center known as the:

- A. Great Library
- B. Royal Academy
- C. House of Wisdom
- D. Grand Bazaar

31. Al-Khwarizmi is considered the father of which field, a term derived from the Arabic *al-jabr*?

- A. Geometry
- B. Calculus
- C. Algebra
- D. Physics

32. Al-Khwarizmi's work introduced the concept of zero and the:

- A. Roman numeral system
- B. binary code
- C. decimal place-value system
- D. analog computation

33. Al-Khwarizmi worked at the House of Wisdom, which was located in which city?

- A. Cairo
- B. Basra
- C. Baghdad
- D. Mecca

34. Al-Khwarizmi is considered the father of algebra, a term derived from the Arabic word:

- A. al-jabr
- B. al-kimya
- C. al-khutt
- D. al-hikma

35. Which time period saw Al-Khwarizmi's contributions in mathematics?

- A. Roman Empire
- B. Han Dynasty
- C. Islamic Golden Age
- D. Middle Ages (Late)

Al-Hazen (Ibn al-Haytham)

36. Al-Hazen was a pioneer in which field of study?

- A. Pharmacology
- B. Acoustics
- C. Biology
- D. Optics

37. Al-Hazen famously overturned the Greek theory of vision by proving that:

- A. light is generated by the eye
- B. vision is caused by sound waves
- C. light travels from an external source, reflects off an object, and then enters the eye
- D. the moon causes visual distortions

38. Al-Hazen provided the earliest clear description of the:

- A. microscope
- B. camera obscura
- C. telescope
- D. astrolabe

39. Al-Hazen insisted that theories must be tested by:

- A. Philosophical debate
- B. Experiments
- C. Religious doctrine
- D. Mythological stories

40. Al-Hazen's major work detailing his new theory of vision was titled:

- A. Euclid's Elements
- B. Kitāb al-Manāzīr
- C. Ordo Virtutum
- D. Causae et Curae

41. Which ancient Greek theory of vision did Al-Hazen overturn?

- A. Vision is caused by sound waves
- B. Light is generated by the eye
- C. Vision is distorted by the moon
- D. The sun is the center of vision

General Synthesis

42. Which of the following figures was not from the Mediterranean (Greek/Roman) world?

- A. Hypatia
- B. Galen
- C. Zhang Heng
- D. Aristotle

43. The modern term "algorithm" is a corruption of the name of which figure?

- A. Al-Hazen
- B. Al-Khwarizmi
- C. Aristotle
- D. Archimedes

44. The primary focus of Hildegard of Bingen's life, as noted in the text, was her role as a German Benedictine:

- A. nun
- B. priest
- C. abbess
- D. composer

Section 2: Matching Figures to Contribution (10 Questions)

Match the figure with their most famous work or primary contribution.

Figure (Q45-Q54)	Answer	Contribution/Work
45. Thales of Miletus		A. Known for the Theory of the Four Humors.
46. Aristotle		B. Authored <i>Kitāb al-Manāzir</i> (Book of Optics).
47. Archimedes		C. Edited <i>Euclid's Elements</i> and <i>Ptolemy's Almagest</i> .
48. Zhang Heng		D. Wrote <i>Physica</i> and the morality play <i>Ordo Virtutum</i> .
49. Galen		E. Introduced the concept of algebra derived from the Arabic <i>al-jabr</i> .
50. Hypatia		F. Founded the Lyceum and established formal logic.
51. Al-Khwarizmi		G. Designed the world's first water-powered armillary sphere.
52. Al-Hazen		H. Demonstrated the principle of buoyancy.
53. Hildegard of Bingen		I. Allegedly predicted a solar eclipse in 585 BCE.
54. Plato (Distractor)		J. Taught Aristotle at the Academy.

Section 3: True/False (10 Questions)

Mark 'T' if the statement is True and 'F' if the statement is False.

1. **T / F:** Zhang Heng's seismoscope was known in Chinese as the *Houfeng Didong Yi*.
2. **T / F:** Galen served as the personal physician to the Emperor Marcus Aurelius.
3. **T / F:** Hypatia was the earliest well-documented female scholar whose primary focus was in medicine and botany.
4. **T / F:** Al-Khwarizmi worked at the House of Wisdom in Baghdad during the Islamic Golden Age.
5. **T / F:** Hildegard of Bingen was encouraged by Pope Eugenius III to document her spiritual visions.
6. **T / F:** Archimedes developed the Archimedes Screw for the purpose of military defense during the siege of Syracuse.
7. **T / F:** Thales calculated the height of the Great Pyramid by measuring its peak.
8. **T / F:** Al-Hazen's theory of vision supported the Greek belief that light was generated by the eye.
9. **T / F:** Aristotle's vast contributions to biology included one of the first known classifications of living things.
10. **T / F:** Galen based his anatomical knowledge entirely on human dissection performed in Rome.