

Try this amazing 70-question quiz to test out your knowledge of science and engineering from the Stone Ages to the present day. All the correct answers can be found somewhere on the timeline overleaf!

MATHS & MEASUREMENT

- 1.** Babylonian mathematicians devised a counting system based on the number:

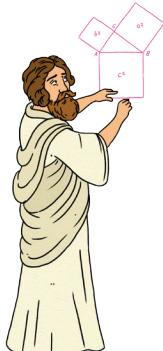
- a) 5
- b) 10
- c) 20
- d) 60

- 2.** How many years are included in the ancient Metonic calendar cycle?

- a) 10
- b) 12
- c) 13
- d) 19

- 3.** Euclid is famous for detailing which branch of mathematics?

- a) Algebra
- b) Calculus
- c) Arithmetic
- d) Geometry



- 4.** Italian merchant Leonardo of Pisa is famous for introducing what to Europe?

- a) The compass
- b) Arabic numerals
- c) The abacus
- d) Oranges

- 5.** Algebra was introduced to the Muslim world by which Arabic scholar?

- a) Al-Kindi
- b) Al-Khwarizmi
- c) Ibn al-Haytham
- d) Avicenna

- 6.** A scientific explanation based on the fewest possible causes – and named after William of Ockham – is known as:

- a) Ockham's Razor
- b) Ockham's Toothbrush
- c) Ockham's Eyeglass
- d) Ockham's Codpiece



- 7.** The supercomputer that defeated chess grandmaster Garry Kasparov was called

- a) True Blue
- b) Big Blue
- c) Blue Brother
- d) Deep Blue

- 8.** Pierre de Fermat and Blaise Pascal pioneered the maths of probability by:

- a) Throwing dice
- b) Flipping coins
- c) Tossing pancakes
- d) Playing Russian roulette

- 9.** Which British engineer developed Colossus, the world's first fixed-program digital computer?

- a) Alan Turing
- b) Albert Einstein
- c) Tommy Flowers
- d) James Chadwick

- 10.** A theodolite is an instrument for measuring:

- a) Straight lines
- b) Angles
- c) Shock waves
- d) Body mass

- 11.** William Thomson (later Lord Kelvin) established that the lowest possible temperature – called absolute zero – is:

- a) 0°C
- b) -268°C
- c) -273°C
- d) -278°C

- 12.** In which unit of measurement does water boil at 100° and freeze at 0°?

- a) Celsius
- b) Fahrenheit
- c) Kelvin
- d) Richter

PHYSICS & CHEMISTRY

- 13.** Chinese monks, who were trying to concoct a potion for everlasting life, accidentally made:
a) Gunpowder
b) Chilli powder
c) Curry powder
d) Custard powder
- 14.** Which of the following statements about the electromagnetic spectrum is NOT true?
a) X-rays have shorter wavelengths than gamma rays
b) Visible light has a shorter wavelength than infrared light
c) Radio waves have longer wavelengths than microwaves
d) Ultraviolet rays have longer wavelengths than X-rays
- 15.** Which of the following women won two Nobel prizes?
a) Marie Curie
b) Florence Nightingale
c) Ada Lovelace
d) Rachel Carson
- 16.** The first atomic device to be detonated was nicknamed:
a) The Inspector
b) The Gadget
c) The Trinity
d) The Daisy
- 17.** LASER is an acronym for:
a) Light Amplification by Super-Efficient Radiation
b) Light Amplification by the Saturated Emission of Radiation
c) Light Amplification by the Stimulated Emission of Radiation
d) Light waves Are So Easily Redirected
- 18.** The Higgs boson is a subatomic particle thought to be responsible for:
a) Gravity
b) Mass
c) Electricity
d) Light
- 19.** Friedrich Wöhler pioneered the science of organic chemistry by artificially synthesising which naturally occurring substance?
a) Nicotine
b) Aspirin
c) Penicillin
d) Urea

- 20.** William Whewell is famous for coining the term:
a) Scientist
b) Technician
c) Engineer
d) Geek



- 21.** Leyden jars were sometimes used for which of the following procedures:
a) Removing eye cataracts
b) Directing the flow of blood during bloodletting
c) Helping stem the flow of blood during surgery
d) Electrocuting naughty servants and children

MEDICINE & BIOLOGY

- 22.** According to the Ancient Greek theory of disease, which of the following was NOT one of the four bodily humours?
a) Blood
b) Bile
c) Water
d) Phlegm
- 23.** Alexander Fleming discovered the antibacterial properties of the fungus *Penicillium* after:
a) Not washing his Petri dishes before he went on holiday
b) Knocking over a bottle of athlete's foot powder
c) Illicitly cultivating magic mushrooms
d) Sneezing into a batch of brewer's yeast
- 24.** Louise Brown is famous for being:
a) The first person to be born after conception by *in vitro* fertilisation (IVF)
b) The last person to die from smallpox
c) The first person to have successful heart transplant surgery
d) The world record holder for solving the Rubik's cube in the fastest time
- 25.** Italian inventor Evangelista Torricelli invented a primitive:
a) Thermometer
b) Barometer
c) Compass
d) Calculator
-
- 26.** Which of the following statements about the pH scale is NOT true?
a) Substances with a pH lower than 7 are acidic
b) Substances with a pH higher than 7 are alkaline
c) The pH scale is linear not logarithmic
d) The colour code for highly acidic substances is red

- 27.** Jakob Boehme's doctrine of signatures suggested that:
- Writing down the names of illnesses can alleviate symptoms
 - Plants shaped like parts of the human body have medicinal qualities
 - Illnesses can be diagnosed from the characteristics of an individual's handwriting
 - Doctors are inclined to be lousy at signing prescriptions

- 28.** What bird did Robert Boyle place in a vacuum pump to see if it could survive without air?
- A lark
 - A pigeon
 - A robin
 - A dodo

- 29.** Which of the following blood groups was NOT one of those identified by Austrian biologist Karl Landsteiner?
- A
 - B
 - O
 - R



- 30.** Physician Joseph Lister is famous for pioneering which of the following concepts?
- Antibiotics
 - Antiseptics
 - Antibodies
 - Antidisestablishmentarianism

- 31.** Edward Jenner, a GP from Gloucestershire, is famous for:
- Electrocuting a dead frog
 - Deliberately infecting an eight-year-old boy with smallpox
 - Amputating his own arm
 - Cross-dressing because he wanted to be a nurse

EARTH & LAND

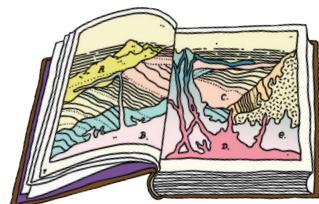
- 32.** Chinese scholar Zhang Heng is famous for inventing a device that could:
- Point south
 - Detect earthquakes
 - Magnify images
 - Glow in the dark

- 33.** According to Leonardo da Vinci, fossils are found high up in rocks because:
- Ancient people put them there
 - The ancient sea floor has been pushed up to a new level
 - The seas once covered all the Earth
 - They originally fell from the sky

- 34.** What do plants release during photosynthesis, as discovered by Dutch botanist Jan Ingenhousz?
- Water
 - Carbon dioxide
 - Sunlight
 - Oxygen

- 35.** Austrian monk Gregor Mendel is famous for discovering the laws of inheritance after cultivating:
- 50,000 silkworms
 - 29,000 pea plants
 - 17,000 fruit flies
 - 9,000 Vietnamese bananas

- 36.** British geologist Charles Lyell championed the theory of uniformitarianism – the idea that the world has been shaped over millions of years by very gradual changes. Which competing geological theory was also widely held at the time?
- Climatism
 - Catastrophism
 - Calamatism
 - Catamorphism



- 37.** *Duria Antiquior* is a famous:
- Painting
 - Book
 - Sculpture
 - Spell

- 38.** Who independently came up with a theory of evolution at the same time as Charles Darwin?
- Charles Lyell
 - Richard Owen
 - Thomas Huxley
 - Alfred Russel Wallace

- 39.** Henry Cavendish calculated that the weight of the Earth is approximately:
- 6 million tons
 - 6,000 million tons
 - 6,000 million million tons
 - 6,000 million million million tons

BUILDING & INVENTION

- 40.** What accounts for what the Ancient Greeks saw when they rubbed amber against cloth?
- Magnetism
 - Erosion
 - Static electricity
 - A genie



41. What did Greek genius Archimedes invent that allowed him to launch a ship single-handedly?

- a) A crane
- b) A slide
- c) A pulley
- d) A screw

42. A *polyspastos* was a human-powered:

- a) Crane
- b) Water pump
- c) Clock
- d) Submarine

43. King Henry VI of England was the first person to grant:

- a) Stocks and shares
- b) A patent
- c) A pension
- d) Three wishes

44. The discovery of which material in Cumbria, England, helped introduce the practice of writing and drawing?

- a) Chalk
- b) Oil
- c) Graphite
- d) Alum



45. Josephine Cochrane invented the dishwasher because:

- a) Her hands became so wrinkly after washing up
- b) She was hydrophobic (afraid of water)
- c) She wanted to show that women could invent machines as well as men
- d) Her servants kept chipping her precious crockery

46. Which hill did Isambard Kingdom Brunel's tunnel – the world's longest at the time – cut through on his railway line to Bristol?

- a) Box Hill
- b) Snow Hill
- c) Avon Hill
- d) Primrose Hill

47. Which artificial construction, completed in 1914, took 33 years to build at a cost of an estimated 22,000 lives?

- a) The Panama Canal
- b) The Suez Canal
- c) The Three Gorges Dam
- d) The Eiffel Tower

48. Alfred Nobel, whose legacy led to the prestigious Nobel Prize, was also the inventor of:

- a) The fountain pen
- b) The traffic light
- c) The gramophone
- d) Dynamite

TRANSPORT & COMMUNICATION

49. Before they took to the skies, the Wright brothers were mechanics, specialising in making and repairing:

- a) Sewing machines
- b) Bicycles
- c) Typewriters
- d) Lawnmowers

50. The first commercial MAGLEV train was opened in which city?

- a) Tokyo
- b) Dallas
- c) Sydney
- d) Birmingham

51. The world's first supersonic car was called

- a) Blast
- b) Thrash
- c) Thrust
- d) Bloodhound

52. For how many years was the supersonic commercial airliner Concorde in active service?

- a) 19
- b) 27
- c) 29
- d) 32

53. John McAdam's revolutionary technique for road-building was first deployed on the turnpike from London to which UK city?

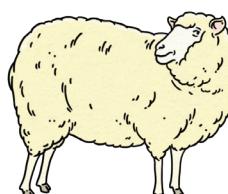
- a) Oxford
- b) Cambridge
- c) York
- d) Bristol

54. Which of the following represents the letter W in Morse code?

- a) * - *
- b) - - *
- c) * * -
- d) * - -

55. Which creatures were NOT included in the Montgolfier test balloon flight that took off from the Palace of Versailles in September 1783?

- a) Rooster
- b) Rabbit
- c) Sheep
- d) Duck

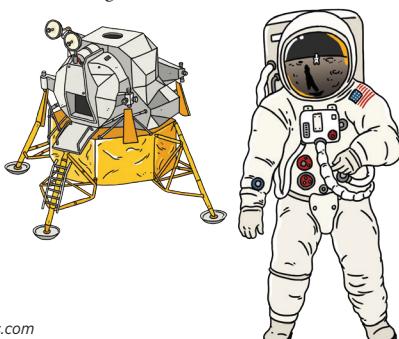


- 56.** Where did inventor Edmond Halley test out his experimental diving bell?
- a) In a swimming pool
 - b) In Lake Windermere
 - c) In the River Thames
 - d) In a fish pond

SKY & SPACE



- 57.** Greek astronomer Aristarchus concluded that:
- a) The Earth orbits the Sun
 - b) The Universe is a flat disc
 - c) Jupiter has four moons
 - d) The Earth is round
- 58.** What did Greek philosopher Thales predict would happen on 28 May 585 BCE?
- a) A solar eclipse
 - b) A lunar eclipse
 - c) A 9.0-magnitude earthquake
 - d) A tsunami
- 59.** Ulugh Beg's giant sextant, built in his home city of Samarkand, could accurately measure:
- a) The distance between the Earth and the Sun
 - b) The length of a year
 - c) The circumference of the Earth
 - d) The number of stars in the northern hemisphere
- 60.** The opposite of a red giant is commonly known as a:
- a) White elf
 - b) White hobbit
 - c) White pixie
 - d) White dwarf
- 61.** The first living creature to be launched into space was a dog called:
- a) Lulu
 - b) Laika
 - c) Litva
 - d) Lolly
- 62.** Which famous TV series was first launched in 1966?
- a) Doctor Who
 - b) Blake's 7
 - c) Star Trek
 - d) The Clangers
- 63.** How long after Apollo's landing on the Moon did Neil Armstrong take his giant leap for mankind?
- a) 30 minutes
 - b) 2 hours
 - c) 6 hours
 - d) 1 day
- 64.** The first space shuttle to blast off from Cape Canaveral was called:
- a) Columbia
 - b) Challenger
 - c) Discovery
 - d) Enterprise
- 65.** What is thought to be the primary cause of the hole in the Earth's ozone layer?
- a) Carbon dioxide
 - b) Chlorofluorocarbons
 - c) Leaded petrol
 - d) Bovine flatulence
- 66.** In 1978 the Japanese computer scientist Tomohiro Nishikado developed:
- a) The World Wide Web
 - b) CFCs
 - c) Leaded petrol
 - d) Space Invaders
- 67.** James Clerk Maxwell explained which of the following astronomical phenomena?
- a) The circumference of the Earth
 - b) The distance to the nearest star beyond the Sun
 - c) The distance between the Earth and the Moon
 - d) The rings surrounding the planet Saturn
- 68.** Halley's Comet becomes visible from the Earth roughly once every:
- a) 62–63 years
 - b) 63–64 years
 - c) 70–71 years
 - d) 75–76 years
- 69.** Hezârfen Ahmed Çelebi is said to have flown across which waterway using a pair of man-made wings?
- a) The Suez Canal
 - b) The Bosphorus
 - c) The River Nile
 - d) The English Channel
- 70.** The Hubble Space telescope is brilliant at capturing clear images of deep space because:
- a) It has a gigantic lens
 - b) It has no interference from the Earth's atmosphere
 - c) It is solar powered
 - d) It is made in England



The What on Earth? Crossword of Science & Engineering

Across

- 1 The theory behind what might happen in Texas when a butterfly flaps its wings in Brazil (5)
- 3 Steve ___, the man who invented the Mac (4)
- 5 Multiple prize-winning Pole (5)
- 7 Wide and global (3)
- 8 The anytime, anywhere, any-place navigation system devised by Roger Easton (1,1,1)
- 9 The unit of electrical resistance is named in his honour (3)
- 12 A monastic experimentalist planted 29,000 of these (4)
- 13 Exclamation made by a genius who had a brainwave in the bath! (6)
- 15 Winner of the steam trials at Rainhill (6)
- 20 The inventor of a multi-faceted cube (5)
- 22 Greek word for thread when applied to cellular separation (7)
- 24 Inventor of the most commonly used ballpoint pen (4)
- 25 Acronym used when amplifying light by radiation (1,1,1,1)
- 26 The world's fastest duck on wheels (7)

Down

- 2 Opposite of alkali (4)
- 4 Type of ancient Greek water pump (5)
- 6 Traditional calculating machine (6)
- 8 Tyresome inventor of vulcanised rubber (8) than all other creatures (4)
- 10 Pyrotechnique that makes humans more powerful
- 11 Nickname for the first atomic device (6)
- 12 Scale that goes from 0-14 (1,1)
- 13 Special agents responsible for bringing about chemical reactions vital for life (7)
- 14 Scale where big is shaky (7)
- 16 Animal that led Jenner to his smallpox vaccine (3)
- 17 Inventor of dynamite who left an award-winning legacy (5)
- 18 Mission possible that took humans to the Moon (6)
- 19 London street that led to the source of cholera (5)
- 21 Flown by a Founding Father in the name of scientific enquiry (4)
- 23 Letters standing for the corporation that introduced personal computing (1,1,1)
- 24 Makes light work (4)

