


Science and Technology

1. Willem Einthoven was a Dutch doctor and physiologist. He invented a common medical tool which is in use today. He received the Nobel Prize in Medicine in 1924 for his invention. What was his invention?
 (a) X-ray machine
 (b) CAT Scanner
 (c) ECG
 (d) MRI
2. Clyde Tombaugh is credited with the discovery of this object on the fringes of our Solar System in 1930. He did so by systematically imaging the night sky in pairs of photographs, then examining each pair and determining whether any objects had shifted position. Name the object.
 (a) Ceres
 (b) Triton
 (c) Deimos
 (d) Pluto
3. pH is a measure of the concentration of hydrogen ions in a solution. The lower the pH, the higher the concentration of hydrogen ions, and the more acidic a solution is. Alkaline or basic solutions have lower concentrations of hydrogen ions, and a pH above 7. Which of the following substances has the highest pH value?
 (a) Pineapple juice
 (b) Caustic soda
 (c) Wine
 (d) Blood
4. Fat can be separated from milk in a cream separator because of
 (a) Centrifugal force
 (b) Cohesive force
 (c) Gravitational force
 (d) Centripetal force
5. The Indian Space Research Organisation (ISRO) successfully launched 104 satellites from Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh. Which of the following is the rocket vehicle used to launch 104 satellites
 (a) PSLV-C37
 (b) PSLV-C38
 (c) PSLV-C39
 (d) PSLV-C40
6. Which special physical trait does the cat called 'Hemingway cat' possess?
 (a) Short tail
 (b) Extra toes
 (c) Curly fur
 (d) Mismatched eye colors
7. Which of the following term describes the alignment of three celestial bodies?
 (a) Syzygy
 (b) Sizzle
 (c) Stretch
 (d) Symbology
8. The time when the Sun crosses the plane of the Earth's equator, making night and day of approximately equal lengths all over the Earth is called
 (a) Easter
 (b) Equinox
 (c) Eclipse
 (d) Solistice
9. For his scientific work, he was awarded the Nobel Prize in Chemistry in 1954. In 1962, for his peace activism, he was awarded the Nobel Peace Prize. This makes him the only person to be awarded two unshared Nobel Prizes. Who is this incredible gentleman?
 (a) Linus Pauling (b) Frederic Joliot
 (c) Richard Feynman (d) Aage Bohr
10. Named after a Norse king, this wireless technology standard enables the exchange of data over short distances, from fixed and mobile devices, using short-wavelength UHF radio waves. It was invented by telecom vendor Ericsson in 1994 as an alternative to wireless. What is it called?
 (a) Oneplus (b) Xender
 (c) Bluetooth (d) Fugu

- 11.** The difference between an exothermic chemical reaction and an endothermic one is that one releases energy while the other uses energy. Which of the following is not an example of an exothermic reaction?
- Burning a log
 - Water freezing into ice
 - Photosynthesis
 - Burning of sugar in the body
- 12.** The Indian Navy has recently inducted four sonar systems to boost its underwater surveillance capabilities. Which of the following is not one of these four systems?
- PALS
 - ABHAY
 - HUMSA-UG
 - AIDSS
- 13.** From where was India's multipurpose telecommunication satellite INSAT-2E launched?
- Thumba
 - Baikanour
 - Kourou
 - Sriharikota
- 14.** The Chandrasekhar Limit is accepted to be approximately 1.4 times the mass of the Sun. A star that exceeds this mass is destined to end its life in a most violent form of explosion. What is it called when a star explodes in this manner?
- Red giant
 - Black hole
 - White dwarf
 - Supernova
- 15.** The 38 elements in groups 3 through 12 of the periodic table are called 'transition metals'. Transition metals include 3 elements that are known to produce a magnetic field. Which of the following is not one of them?
- Iron
 - Cadmium
 - Cobalt
 - Nickel
- 16.** Scientists believe that about 75% of the universe consists of dark matter and dark energy, but roughly 75% of the ordinary matter consists of this element, with helium making up nearly 25%, and all of the other elements adding up to less than 1%. Name this element.
- Carbon
 - Nitrogen
 - Oxygen
 - Hydrogen
- 17.** Light is deflected when it passes obliquely through the interface between one medium and another, or through a medium of varying density. What will happen when a light ray travelling in glass is incident on an air surface?
- It will refract away from the normal.
 - Some of the light may be reflected.
 - All of the light may be reflected.
 - All of these may happen.
- 18.** The American theoretical physicist shown in the picture is known for his work in quantum electrodynamics, for which he received the Nobel Prize in Physics in 1965. He assisted in the development of the atomic bomb during World War II and became known to a wide public in the 1980s as a member of the panel that investigated the Space Shuttle Challenger disaster. Identify this scientist.
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- Erwin Schrodinger
 - Richard Feynman
 - Max Planck
 - Paul Dirac
- 19.** Phytohormones are chemicals that regulate plant growth. They are signal molecules produced within the plant, and occur in extremely low concentrations. Which of the following are not phytohormones?
- Auxins
 - Jasmonates
 - Cytokinins
 - Corticoids

- 20.** What is the term given to each of two or more alternative forms of a gene that usually arise by mutation and are found at the same place on a chromosome?
- (a) Locus
 - (b) Allele
 - (c) DNA
 - (d) RNA

Answer – Key				
1. C	2. D	3. B	4. A	5. A
6. B	7. A	8. B	9. A	10. C
11. C	12. A	13. C	14. D	15. B
16. D	17. A	18. B	19. D	20. B