



- 24 C  
Ex.
- 25 A  
Ex. The recipients of the Nobel Prize in Chemistry 2019 are John B. Goodenough, M. Stanley Whittingham and Akira Yoshino for the development of lithium-ion batteries. Do you know that this lightweight, rechargeable and powerful battery can be used in mobile phones to laptops, electric vehicles? Not only this, it can even store significant amounts of energy from solar and wind power, making possible a fossil fuel-free society.
- 26 C  
Ex. India successfully conducted its first anti-satellite (ASAT) missile test on 27 March, 2019 destroying low earth orbit satellite in space by using a missile that covered a distance of 300 km to engage the target. Let us tell you that India became the fourth country to acquire such type of modern capability. The codename of ASAT is Mission Shakti.
- 27 C  
Ex.
- 28 D  
Ex. Burning biomass emits large amounts of pollutants like burning other solid fuels such as coal. Burning organic material emits Particulate Matter (PM), Nitrogen Oxide (NO<sub>x</sub>), Carbon Monoxide (CO), Sulphur Dioxide (SO<sub>2</sub>), Lead (Pb) Mercury and hazardous air pollutants.
- 29 D  
Ex.
- 30 B  
Ex.
- 31 A  
Ex.
- 32 A  
Ex. Cas9 protein has been in news for its property of being molecular scissors used in targeted gene editing. It is also known as CRISPR associated protein 9. It is heavily utilised in genetic engineering application's. It's main function is to cut DNA. So it can alter cells genome. It plays an important role in the immunological defense of certain bacteria against DNA viruses.
- 33 D  
Ex.
- 34 D  
Ex.
- 35 B  
Ex.
- 36 C  
Ex. \* ATP is the energy currency for most cellular processes. The energy released during the process of cellular respiration is used to make an ATP molecule from ADP and inorganic phosphate.  
\* Endothermic processes (processes that consume energy) in the cell then use this ATP to drive the reactions. When the terminal phosphate linkage in ATP is broken using water, the energy equivalent to 30.5 kJ/mol is released.  
\* Hence, both the statements are correct.
- 37 B  
Ex.

- 38 D  
Ex.
- 39 A  
Ex.
- 40 B  
Ex.
- 41 B  
Ex. \* Femur is the thigh bone. It is the longest and strongest bone in the human body.  
\* The sternum or breastbone is a long flat bone located in the central part of the chest. It connects to the patella, also known as the kneecap, is a thick, circular-triangular bone which articulates with the femur (thigh bone) and covers and protects the anterior articular surface of the knee joint.
- 42 A  
Ex.
- 43 D  
Ex.
- 44 C  
Ex. The Kerala State Aids Control Society (KSACS) announced to reserve a government job for HIV positive candidates. A vacancy has been reserved in the office of KSACS for HIV positive candidates for the post of coordinator. The reason behind is that the presence of such a person will improve coordination and communication with groups at risk and ensure effective prevention.
- 45 D  
Ex.
- 46 A  
Ex.
- 47 D  
Ex.
- 48 B  
Ex.
- 49 D  
Ex.
- 50 A  
Ex.
- 51 C  
Ex. Elements vary in abundance. Among metals, aluminium is the most abundant. It is the third most abundant element in earth's crust (8.3% approx. by weight). It is a major component of many igneous minerals including mica and clays. Many gemstones are impure forms of Al<sub>2</sub>O<sub>3</sub> and the impurities range from Cr (in 'ruby') to Co (in 'sapphire'). Hence statement 1 is correct. For the purpose of extraction, bauxite is chosen for aluminium. Hence statement 2 is correct.
- 52 D  
Ex.
- 53 B  
Ex.
- 54 A  
Ex.
- 55 C  
Ex.

- 56** A  
**Ex.** Carbofuran, methyl parathion, phorate and triazophos chemicals are used as pesticides in India to control insects in a wide variety of field crops. Carbofuran is one of the most toxic carbamate (derived from carbamic acid) pesticides. Parathion or methyl parathion has been banned in various countries due to its high toxicity to humans. Triazophos is a chemically toxic insecticide which could lead to headaches, blurred vision, dizziness etc., in humans. Phorate is also a highly toxic chemical compound, used as an insecticide.
- 57** B  
**Ex.**
- 58** C  
**Ex.**
- 59** D  
**Ex.**
- 60** A  
**Ex.**
- 61** C  
**Ex.**
- 62** A  
**Ex.** is the second mission to the moon which was launched on 22 July, 2019 by India's Geosynchronous Satellite Launch Vehicle (GSLV Mk III). It reached lunar orbit on 19 August, 2019. Despite the crash-landing of the Lander, ISRO confirmed that all the instruments are onboard the orbiter and are working well.
- 63** B  
**Ex.**
- 64** B  
**Ex.**
- 65** D  
**Ex.**
- 66** D  
**Ex.** On 14 September 2019, Russia's world first floating nuclear power plant has been completed. It is about 5,000 kilometre (3,100 miles) Arctic transfer to the country's far east. The floating nuclear power plant named 'The Akademik Lomonosov'. It will start operating by the end of the year from Pevek, the autonomous district of Chukotka. It will provide energy for around 1, 00,000 people and also power oil platforms.
- 67** B  
**Ex.** Augmented Reality is a technology where the objects that reside in the real world are enhanced by computer-generated perceptual information. It allows individuals to be present in the world and improves the experience using the camera of smartphone or PC. Virtual reality is the use of computer technology to craete a simulated environment. It immeres the user by making them feel like they are experiencing simulated reality. It replaces the user's real world environment with a simulated one. Its applications include entertainment and educational purposes.

- 68** A  
**Ex.** The satellites of NASA had discovered 'First Nearby Super-Earth'. It is a planet that could possibly support life. The team of International Astronomers announced their findings in the publication Astronomy and Astrophysics. The new discovery is known as an exoplanet. It is basically a planet that orbits a star outside of our solar system.
- 69** D  
**Ex.**
- 70** D  
**Ex.** Zika virus was first detected in Uganda in 1947 by the scientists when they were researching on yellow fever. Zika Virus was named after the Zika Forest of Uganda. In the local language word, Zika means overgrown. In the research, scientists came across a different and apparently harmless virus transmitted by mosquitoes to monkeys and they named it as Zika.
- 71** D  
**Ex.**
- 72** B  
**Ex.**
- 73** A  
**Ex.**
- 74** C  
**Ex.**
- 75** D  
**Ex.**
- 76** D  
**Ex.**
- 77** A  
**Ex.** \* Arteries are the vessels which carry blood away from the heart to various organs of the body. Since the blood emerges from the heart under high pressure, the arteries have thick, elastic walls.  
 \* Veins collect the blood from different organs and bring it back to the heart. They do not need thick walls because the blood is no longer under pressure, instead they have valves that ensure that the blood flows only in one direction.  
 \* Hence, only statement I is correct.
- 78** D  
**Ex.**
- 79** D  
**Ex.** The 'Additional Protocol' is not a stand-alone agreement, but rather a protocol to a safeguards agreement that provides additional tools for verification. In particular, it significantly increases the IAEA's ability to verify the peaceful use of all nuclear materials in states with comprehensive safeguards agreement. With the signing of additional protocol with IAEA, the civilian nuclear reactor comes under IAEA safeguards.
- 80** C  
**Ex.** Terminal High Altitude Area Defense (THAAD), formerly Theater High Altitude Area Defense, is an American anti-ballistic missile defense system designed to shoot down short, medium, and intermediate-range ballistic missiles in thier terminal phase (descent or re-entry) by intercepting with a hit-to-kill approach.
- 81** C  
**Ex.**

