

Important Science & Technology Current Affairs News for UPPCS Exam (Prelims) 2012

- China on 23 December 2011 launched a high-speed bullet train in Qingdao, Shandong province. Its speed can reach up to 500 kilometres per hour. The train was launched by China's largest rail vehicle maker, CSR Corp. Ltd. The six-car train has a maximum tractive power of 22800 kilowatts, compared with 9600 kilowatts for the CRH380 trains. The train is made from plastic materials reinforced with carbon fibre. It is designed to resemble an ancient Chinese sword.
- A team of neuroscientists found a gene that turns on when memories are stored in the brain. This discovery could help trace the exact locations of memories in the brain. It could help in creating and altering memory. The gene is called *Npas4*, which is very active in the hippocampus. The animal is known to have a brain structure critical in forming long-term memories.
- Scientists discovered a way to transform ordinary tissue into beating heart muscle cells. It could pave the way for new therapeutic approaches for making a damaged heart to repair itself. Scientists used a zebrafish system to develop a small and robust molecule, which can transform stem cells into beating heart muscle cells.
- NASA's Kepler mission on 20 December 2011 discovered the first Earth-size planets orbiting a sun-like star outside our solar system. The planets, called *Kepler-20e* and *Kepler-20f*, are too close to their star to be in the so-called habitable zone where liquid water could exist on a planet's surface, but they are the smallest exoplanets ever confirmed around a star like our sun.
- Scientists invented the Oncotype DX test to detect breast cancer. It will help those women who are in the early stages of breast cancer. It will save them the trouble of undergoing chemotherapy.
- NASA (National Aeronautics and Space Administration) built a prototype capable of launching test harpoon tips across a distance of a mile (1.6km). It would be safer to collect comet material using the space harpoon before landing on the celestial bodies.
- Scientists developed a hydrogel that regenerated healthy and scar-free tissue on skin damaged by severe burns. The hydrogel helps in formatting of new blood vessels and skin including hair follicles. The injured soldiers, fire victims and people with third degree burns can avail of the gel. Third-degree burns typically destroy the top layers of skin down to the muscle.
- Scientists claimed that now a simple test could diagnose breast cancer in women in eight seconds. They claim to have developed it from a technology that is used to detect land mines. The new screening tool, called *MARIA*, is safer and more comfortable than traditional mammogram X-rays. It can be used on women of any age, unlike current technology.
- A team of researchers from NASA's Kepler Mission discovered a habitable earth-like planet, called *Kepler-22b*. This newly discovered planet orbits around a sun-like star 600 light years away from the planet earth. The star is located near the constellations of Lyra and Cygnus.

- An international team of scientists led by Prof Richard Harvey of the University of New South Wales and colleagues at Victor Chang Cardiac Research Institute discovered a new population of adult stem cells in the heart. The findings were published following recent reports that stem cells harvested from human hearts during surgery show promise for reversing heart attack damage.
- India successfully test-fired its nuclear capable Agni-I strategic ballistic missile on 1 December 2011 from the test range at Wheeler Island off Odisha coast, as part of the Indian Army's user trial. It was test-fired from a mobile launcher, from launch pad-4 of the Integrated Test Range (ITR). The Strategic Force Command (SFC) of the Army, as part of their training exercise, executed the trial with logistic support provided by Defence Research Development Organisation (DRDO) at the ITR. The trajectory of the missile, which had an operational strike range of 700 km, was tracked by sophisticated radars and electro-optic telemetry stations located along the sea coast and ships positioned near the impact point in the downrange area.
- Scientists discovered the biological clue to male baldness. It increased the chances of a treatment to stop or even reverse hair-loss. They found that most men go bald in middle age. About 80 percent of men have some hair loss by the age of 70. The male sex hormone testosterone as well as genetic factors cause the hair follicles to shrink, which leads to the appearance of baldness. A key protein's presence (called prostaglandin D synthase) is increased in the cells of hair follicles which can be located in bald patches on the scalp, but not in hairy areas.
- A scientist from Iran developed a gas-filled aspirin that can enhance the cancer-fighting ability of the drug. The new Aspirin was dubbed NOSH, which stands for Nitric Oxide and Hydrogen Sulphide. The new Aspirin reduces the harmful side effects of taking aspirin. Aspirin is effective against Cancer. But it can also cause bleeding in the gut and ulcers.
- Scientists identified at least two genes, NACP and MAPT linked to Parkinson's disease, a finding which may pave the way for better treatments for the second most prevalent neurological condition after dementia. The two genes are related to protein accumulation in the brains of people with Parkinson's disease and can indicate how quickly the disease will progress in a person.
- India on 26 April 2012 launched its first indigenous all-weather Radar Imaging Satellite (RISAT-1). The satellite, whose images will facilitate agriculture and disaster management, was launched successfully on board the PSLV-C19 from Sriharikota in Andhra Pradesh.
- Scientists are building a human brain. For that they are using the world's most powerful supercomputer. It will stimulate the entire human mind to fight against Alzheimer's and other brain diseases.
- Scientists recently discovered a combination of proteins involved in prostate disorders. This could pave the way for effective and better treatments. In fact, scientists identified the G protein-coupled receptors, which enable cells to respond to neurotransmitters and hormones. G protein-coupled receptors are essential proteins on the outside of cells that enabled signals from hormones and neurotransmitters to be transferred into the cell.
- Italian Scientists in the second week of April 2012 found an intestinal parasite in pigs called *Dientamoeba Fragilis*, which also causes diarrhoea in humans. This discovery will help scientists understand its transmission better and find effective treatment.

- Scientists identified two genes called OLFM4 gene and HOXB5 that increase the risk of common childhood obesity. The early Growth Genetics (EGG) Consortium made this finding. This finding will pave the way for preventive interventions and treatments for children based on their individual genomes.
- A three-man team on 15 May 2012 blasted off from Russia's Baikonur cosmodrome in Kazakhstan on board a Russian-made Soyuz craft for a half-year stay at the International Space Station. Nasa astronaut Joseph Acaba and Russian cosmonauts Gennady Padalka and Sergei Revin set off from the Baikonur facility as scheduled.