SCIENCE CENTRE NEWS LETTER

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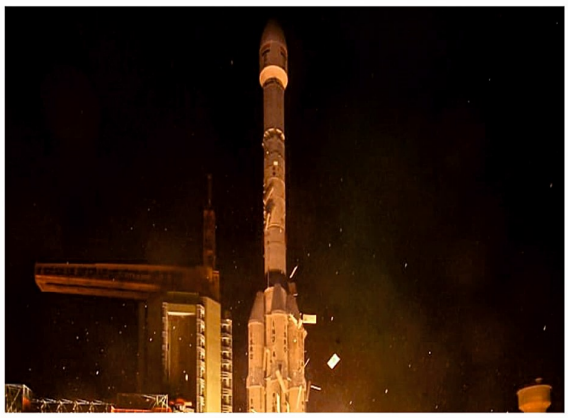
WHAT'S NEW IN SCIENCE?

Yet another outstanding achievement: Hon. Prime minister shri Narendra Modi praises Isro after EOS-05 launch

The successful launch of ISRO'S GSLV-F17 carrying EOS-05(Indian Earth Observation Satellite) drew praise from Hon. Prime Minister Narendra Modi.



The GSLV-F17 lifted off from the Second Launch Pad at the Satish Dhawan Space Centre in Sriharikota at 2:55 am IST on 4th September, 2026. The rocket sucessfully placed the 2,367 kg EOS-05 into a Sub-Geosynchronous Transfer Orbit.

On 5 and 6 September, the Satellite fired its Liquid Apogee Motor (LAM) engine twice for 5406.4 seconds (about 90 minutes) and 5 minutes to reach orbits at 20,000 km × 31,129 km and 35,786 km respectively. The Satellite was originally present at an altitude of 171 km. On 7 September, the third and final orbit rising manoeuvre to reach its intended geosynchronous orbit with altitude ranging between 34,903 km × 35,884 km. The LAM engine fired for 1247 seconds until 8:47pm IST. The systems of the Satellite will be monitored for next few days after which the imaging systems will be activated.

EOS-05 is India's first imaging satellite designed to operate from geosynchronous orbit, nearly 36,000 km above Earth. Its position will allow it to repeatedly observe a large region, strengthening India's Earth-observation capabilities.

Hon. Prime Minister Shri Narendra Modi described the mission as an "outstanding achievement" and "a proud moment for our nation."

Source:https://www.indiatoday.in/science/story/isro-eos-05-launch-pm-modi-amit-shah-priyanka-gandhi-reactions-2986881-2026-09-04, en.wikipedia.org/wiki/EOS-05

Author: Aryan on 4th September, 2026

SCIENTIST OF THE MONTH

Sir Nil Ratan Sircar

Sir Nil Ratan Sircar was born on October 1, 1861 at Netra in West Bengal. He received Diploma in Medicine from the Campbell Medical School in 1879 and M.D. from Calcutta University in 1889. He received D.C.L. (Hon. Cau.) from the Edinburg University.

Sir NILRATAN SIRCAR, Kt., M.A., M.D., LL.D., D.C.L.

He was an unparalleled physician, whose total commitment was to treat people. He regularly treated impoverished patients for free. He even opened his home to such people. He often picked up sick persons from streets and brought them home for treatment. He was associated with many educational institutions of West Bengal and strived relentlessly for the development of technical and higher education in India and to free the medical profession in India from the dominance of the Europeans.

Sir Nil Ratan Sircar was an Indian medical doctor, educationist, philanthropist, and swadeshi entrepreneur who rose from humble beginnings to become a leading physician and national figure.

Sir Nil Ratan Sircar received knighthood in 1917 and the Government of India Award for his lifetime achievement. He passed away on 18 May, 1943.

Main Source: 101, Great Indian Scientists Book, By Shyam Dum

SCIENCE FACTS OCTOBER 2026

1 October 1904	:	Austrian- born Physicist Otto Robert Frisch (First Measured the magnetic moment of the proton) was born.
2 October 1852	:	Scottish Chemist William Ramsay (Winner of the 1904 Nobel Prize in Chemistry who discovered the noble gases) was born.
3 October 1904	:	American Chemist Charles J. Pedersen (Co-winner of the 1987 Nobel Prize in Chemistry for describing methods of synthesizing crown ethers) was born.
4 October 1916	:	Russian Physicist Vitaly Ginzburg (Co-winner of the 2003 Nobel Prize in Physics for their pioneering contributions to the theory of superconductors and superfluids) was born.
5 October 1882	:	American rocket scientist Robert Goddard was born.
6 October 1937	:	Italian Molecular Geneticist Mario R. Capecchi (Co-winner of the 2007 Nobel Prize in Physiology/Medicine for their discoveries of principles for introducing specific gene modifications in mices by the use of embryonic stem cells) was born.
7 October 1885	:	Danish Physicist Niels Bohr (Who made foundational contributions to understanding atomic structure and quantum theory) was born.
8 October 1917	:	English Biochemist Rodney Robert Porter (Co-winner of the 1972 Nobel Prize in Physiology/Medicine for determining the chemical structure of an antibody) was born.
9 October 1852	:	German Chemist Hermann Emil Fischer (Winner of the 1902 Nobel Prize in Chemistry in recognition of the extra ordinary services he has rendered by his work on sugar and purine syntheses) was born.
10 October 1930	:	French Chemist Yves Chauvin (Co- winner of the 2005 Nobel Prize in Chemistry for the development of the metathesis method in organic synthesis) was born.
10 October 1936	:	German Chemist Gerhard Ertl (Winner of the 2007 Nobel Prize in Chemistry for his studies of chemical processes on solid surfaces) was born.
11 October 1884	:	German Chemist Friedrich Bergius (Co-winner of the 1931 Nobel Prize in Chemistry in recognition of their contributions to the invention and development of chemical high-pressure methods) was born.
14 October 1914	:	American Physicist Raymond Davis Jr. (Co-winner of the 2002 Nobel Prize in Physics who detect neutrinos emitted from the Sun) was born.
18 October 1960	:	American Biologist Craig C. Mello (Co-winner of the 2006 Nobel Prize in Physiology/ Medicine for their discovery of RNA interference-gene silencing by double-strand RNA) was born.
18 October 1967	:	The Soviet probe Venera 4 reaches Venus and become the first spacecraft to measure the atmosphere of another Planet.
20 October 1891	:	English Physicist James Chadwick (Winner of the 1935 Nobel Prize in Physics for his discovery of the neutron in 1932) was born.
21 October 1944	:	French Chemist Jean-Pierre Sauvage (Co-winner of the 2016 Nobel Prize in Chemistry for the design and synthesis of molecular machines) was born.
22 October 1903	:	American Geneticist George Wells Beadle (Co-winner of the 1958 Nobel Prize in Physiology/Medicine for their discovery of the role of genes in regulating biochemical events within cells) was born.
22 October 2008	:	India launches its first unmanned lunar mission Chandrayaan-1.
24 October 1932	:	French Physicist Pierre-Gilles de Gennes (Winner of the 1991 Nobel Prize in Physics for discovering that methods developed for studying order phenomena in simple systems can be generalized to more complex forms of matter, in particular to liquid crystals and polymers) was borm.
28 October 1914	:	British Biochemist Richard Laurence Millington Synge (Co-winner of the 1952 Nobel Prize in Chemistry for the invention of Partition Chromatography) was born.
30 October 1939	:	American scientist Leland H. Hartwell (Co-winner of the 2001 Nobel Prize in Physiology/Medicine for their discoveries of protein molecules that control the division[duplication]) was born.
31 October 1835	:	German Chemist Adolf von Baeyer (Winner of the 1905 Nobel Prize in Chemistry in recognition of his services in the advancement of organic chemistry and the chemical industry, through his work on Organic Dyes and Hydroaromatic compounds) was born.

U.N. – United Nations

WHO – World Health Organization

UNESCO – United Nations Educational Scientific & Cultural Organization

Ans: 1. c 2. d 3. c 4. a 5. b

Timings

Tuesday to Sunday
& Public Holidays
9.30 am to 4.30 pm

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बहुजनहिताय बहुजनसुखाय

SCIENTIFIC QUESTION

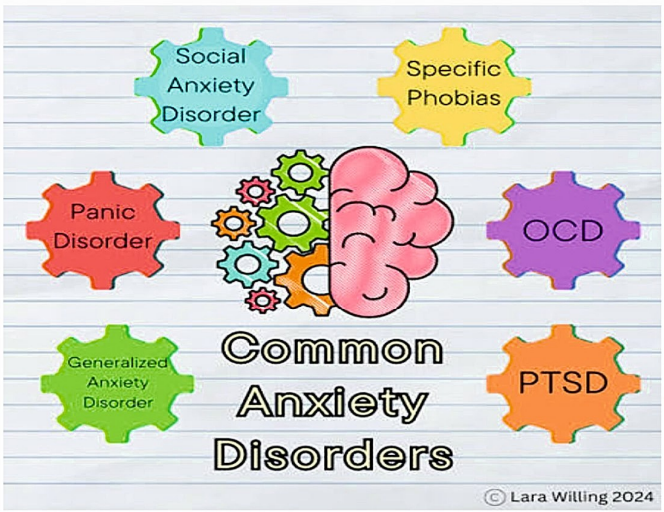
What is Mental Disorders? - Type - 1

Anxiety Disorder :
Anxiety disorders are the most common mental health conditions worldwide, Characterized by intense, excessive and persistent fear of worry that disrupt daily life while ordinary anxiety is a normal reaction to stress, an anxiety disorder involves emotional and physical symptoms that are difficult to control. out of proportion to actual danger, and last for months or longer.

a. common types of Anxiety disorders:
1. Generalized Anxiety Disorder (GAD):
2. Panic Disorder.
3. Social Anxiety Disorder
4. Specific Phobias
5. Agoraphobia

b. Recognizable Symptoms:
Symptoms affect both the mind and the body.

Category	Symptoms
1. Physical	Increased heart rate hyperventilation, sweating, trembling, Chronic fatigue, gastrointestinal issues.
2. Cognitive	Difficulty concentrating, Constant rumination, over thinking worst-case scenarios,sense of impending doom.
3 Behavioral	Actively avoiding anxiety, inducing places, people, Situations or activities.



c. Main causes and Risk Factors.
Anxiety disorders stem from a complex, mix of biological and environmental factors:

- **Brain chemistry-** Imbalances in neurotransmitters like serotonin and dopamine, or overactivity in the amygdala
- **Genetics -** A higher risk if biological parents or siblings have an anxiety disorder
- **Life experiences -** Exposure to childhood abuse, trauma, severe loss or prolonged chronic stress
- **Medical Conditions -** Underlying physical illnesses like thyroid disorders or heart disease can trigger Symptoms

d. Treatment :
- **Psychotherapy-** Cognitive Behavioral Therapy (CBT) is widely considered the most effective talk therapy. It teaches individuals to identify challenge and modify negative thought patterns and behaviors

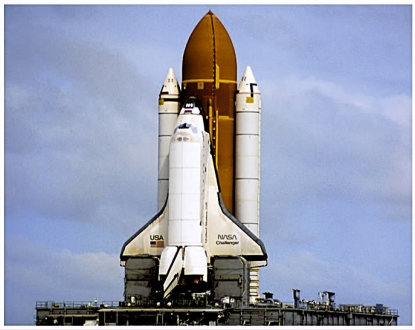
- **Medications-** Doctors frequently prescribe selective serotonin Reuptake Inhibitors (SSRIs) or Serotonin Norepinephrine Reuptake Inhibitors (SNRIs) as first-line medical treatments.

- **Lifestyle Adjustments -** Regular exercises, limiting caffeine and alcohol, practicing mindfulness and optimizing sleep hygiene offer robust complementary benefits.

Main Source and Image: http://en.wikipedia.org, http://www.psychiatry.org

KNOW THE ENTERING INTO SPACE GALLERY EXHIBIT

Space Shuttle - Challenger (1983-1986)



The challenger was originally built as a test Vehicle. This space shuttle also achieved major milestones in Space missions like launching first tracking and Data Relay Satellite, flying the first American Female Astronaut (Sally Ride). This shuttle exploded in January 28, 1986. Killing all 7 Astronauts on board. This diaster prompted to a slowdown of shuttle launching frequency.

This exhibit is situated at "Entering Space Gallery" between Fun Science Gallery and Power of Play Gallery at the first floor of Science Centre.

PROJECT

Surat Municipal Corporation had organized "Science Fair-2026" at Art Gallery, Science Centre Surat on 12th and 13th August, 2026 for students of Std. 8 to 12. Good Shepherd English higher Sec. School had participated in Science Fair with their project on " Pollution control" under the sub-theme of Technology in the field of Health and Wellness.

The aim of the project was to Control air and water Pollution with telemedicine

Air pollution happens when harmful gases, dust and smoke enter the atmosphere. To control it effectively, we must target the source of emissin. We can control air pollution by switching to renewable energy, improving transportation, filter industrial smoke, stop open burning and by plantation of more trees.

Water pollution is devastating contamination of Earth's aquatic ecosystems occurring when harmful substances like industrial chemical, untreated sewage, plastic and agricultural runoff compromise water bodies like rivers, lakes and oceans. We can control it by treating waste water, reduce agricultural runoff, disposal of hazardous waste safely, eliminate plastic waste and use eco-friendly products.

QUIZ

1. Which of the following compounds has a sweet, fruit smell?
a. Ethanol b. Acetic acid c. ethyl acetate d. ethane

2. What medicine is given to someone who is addicted to alcohol to help them quit?
a. Diclofenac sodium b. Aspirin c. Paracetamol d. Disulfiram

3. What is the name of the aldehyde derivative of Methane?
a.Eethane b. Methanoic acid c. Methanol d. Chloromethane

4. 5. What is the molecular formula of ethanol?
a. CH_3CHO b. CH_3OH c. HCHO d. HCOOH

5. What is the molecular formula of Methanol?
a. CH_3CHO b. CH_3OH c. HCHO d. HCOOH

Main Source: Navneet MCQs Science and Technologies. Std 10