6TH MAY VOCAB OF PERFECTION

P. elements like hydrogen, helium, and (a)/ the Big Bang, about 13.8 billion years ago (b)/ formed shortly after (c)/ while scientists agree that lighter (d)/ trace amounts of lithium were (e)
Q. But the distribution of gold, which is heavier than iron, throughout the universe has posed a mystery to astrophysicists.
R. Astronomers have been trying to determine the cosmic origins of the heaviest elements, like gold, for decades.
S. This dramatic event produced gravitational waves—ripples in space-time—and a powerful gamma-ray burst. The collision, known as a kilonova, also generated heavy elements like gold, platinum, and lead.
T. In recent years, the cosmic production of gold has been linked to neutron star collisions.
U. Then, exploding stars released heavier elements like iron, which became incorporated in newborn stars and planets.
V. A groundbreaking observation in 2017 confirmed this theory when astronomers witnessed a neutron star merger.

1. **Elements** – Basic substances from which all matter is made; e.g., hydrogen, helium.

2. **Big Bang** – The scientific theory describing the origin of the universe from a single point 13.8 billion years ago.

3. **Astrophysicists** – Scientists who study the physical

properties and behavior of celestial bodies and the universe.

4. **Kilonova** – A powerful astronomical event caused by the collision of neutron stars, producing heavy elements.

5. **Gravitational waves** – Ripples in the fabric of space-time caused by accelerating massive objects.

6. **Gamma-ray burst** – A high-energy explosion observed in distant galaxies, typically associated with neutron star collisions or supernovae.

7. **Neutron star** – A highly dense remnant of a supernova explosion, composed mostly of neutrons.

8. **Platinum, Lead, Gold** – Heavy elements formed in extreme cosmic events like neutron star mergers.

9. **Iron** – A heavy element formed in supernovae and common in planets and stars.

10. **Cosmic origins** – The beginning or source of elements and matter in the universe.

P. Nomi and Replika say their platforms are only for adults, and Character.AI says it has recently implemented additional youth safety measures.
Q. The report comes in the wake of a tragic lawsuit filed last year concerning the suicide of a 14-year-old boy whose final interaction was with a chatbot.
R. So, Other companies should also consider implementing changes to make their products as safe and user-friendly as Chatgpt.
S. Artificial intelligence (AI) companion apps present serious and unacceptable risks to children and teens, according to a new report by the nonprofit watchdog Common Sense Media.
T. But researchers say the companies need to do more to _(A)_ of their platforms, or protect them from accessing inappropriate content.
U. Common Sense Media asserts that such apps should not be accessible to users under the age of 18. In collaboration with researchers from Stanford University, the organization evaluated three leading AI companion apps: Character.AI, Replika, and Nomi.
V. That lawsuit, brought against the app Character.AI, thrust this new category of conversational apps into the spotlight — along with their potential risks to young people, leading to calls for more safety measures and transparency.
W. However, general-purpose AI tools like ChatGPT are designed to be more broadly appropriate and user-friendly, including for younger audiences.

1. **AI companion apps** – Applications powered by artificial intelligence that simulate conversation or emotional support.

2. **Nonprofit watchdog** – An independent organization that monitors and reports on industries or issues, often for public interest.

3. **Suicide** – The act of intentionally taking one's own life.

4. **Youth safety measures** – Policies or actions designed to protect children and teenagers from harm.

5. **Inappropriate content** – Material that is unsuitable for certain audiences, especially minors.

6. **Conversational apps** – Software designed for back-and-forth dialogue with users, often using AI.

7. **Transparency** – Openness and clarity in how systems, especially digital or AI-based, operate and affect users.

8. **User-friendly** – Easy to use and navigate, especially for non-expert users.

9. **Implementation** – The act of putting a plan or system into effect.

10. **Risks to children and teens** – Potential dangers or harms these groups may face, especially online or with digital technology.

P. However, Eos went unnoticed because it contains very little carbon monoxide and therefore lacks the usual emissions that conventional instruments detect.
Q. The journal also outlines that molecular clouds are made of gas and dust, where molecules like hydrogen and carbon monoxide form.
R. Named Eos, after the Greek goddess of the dawn, this vast gas cloud would span a significant portion of the night sky if it were visible to the naked eye.
S. An invisible molecular cloud that could shed light on how stars and planets form has been detected surprisingly close to Earth.
T. Instead, the breakthrough came when researchers traced ultraviolet light emitted by hydrogen within the cloud, revealing its presence.
U. According to a study published in Nature Astronomy, Eos stretches across an area roughly 40 times the width of the Moon and has a mass approximately 3,400 times that of the Sun.
V. Study coauthor Thomas Haworth explained that scientists typically detect molecular clouds using radio and infrared signals, which reveal the presence of carbon monoxide.

- **Molecular cloud** – A type of interstellar cloud consisting mainly of hydrogen molecules, where stars are often born.

- **Gas and dust** – Fundamental materials in space from which stars and planets form.

- **Ultraviolet light** – A type of electromagnetic radiation with wavelengths shorter than visible light, often used in astronomical detection.

- **Carbon monoxide** – A molecule commonly found in space; its presence is used to detect molecular clouds.
- **Infrared signals** – Heat-based radiation that can be used to observe space objects.
- **Mass** – The amount of matter in an object; here used to describe the size of the Eos cloud.
- **Eos** – Name given to the molecular cloud; also the Greek goddess of the dawn.
- **Nature Astronomy** – A respected scientific journal that publishes astronomy-related studies.
- **Detect** – To discover or identify the presence of something, especially when it is not visible.
- **Emission** – The act of giving off energy, such as light or heat, which can be used for observation.