



Olympic torch with recycled aluminium. I have used foil.

Olympic rings with wool activity.

Name : Aanya Sarma

Sub : EVS Open Book Project - Term II

Class : 4 Daisies

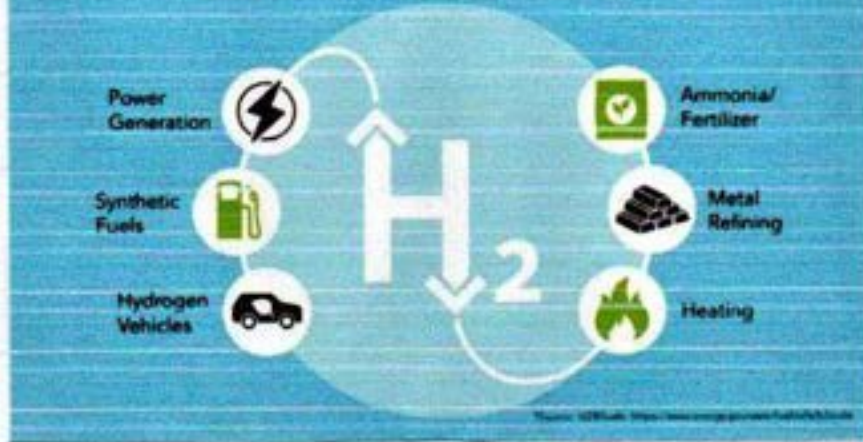
School : Lakshminagar Singhania Academy



Ans: 1 (i)

Why do we need HYDROGEN?

Hydrogen has the highest energy content by weight of any chemical fuel – three times higher than gasoline – and it's a critical feedstock for the chemical industry, including oil refining and fertilizer production. It also powers fuel cells with little or no emissions. Advances in hydrogen technology could spur innovation in everything from steel manufacturing and ironmaking to energy storage and transportation by light-duty and heavy-duty vehicles, trains, planes and boats.



Hydrogen energy :

Introduction : Hydrogen is the most common chemical in the universe. It can be produced as a gas or liquid.

When stored as gas, it can be delivered through existing natural gas pipe lines.

When converted to a liquid, it can be transported on trucks and in ships to

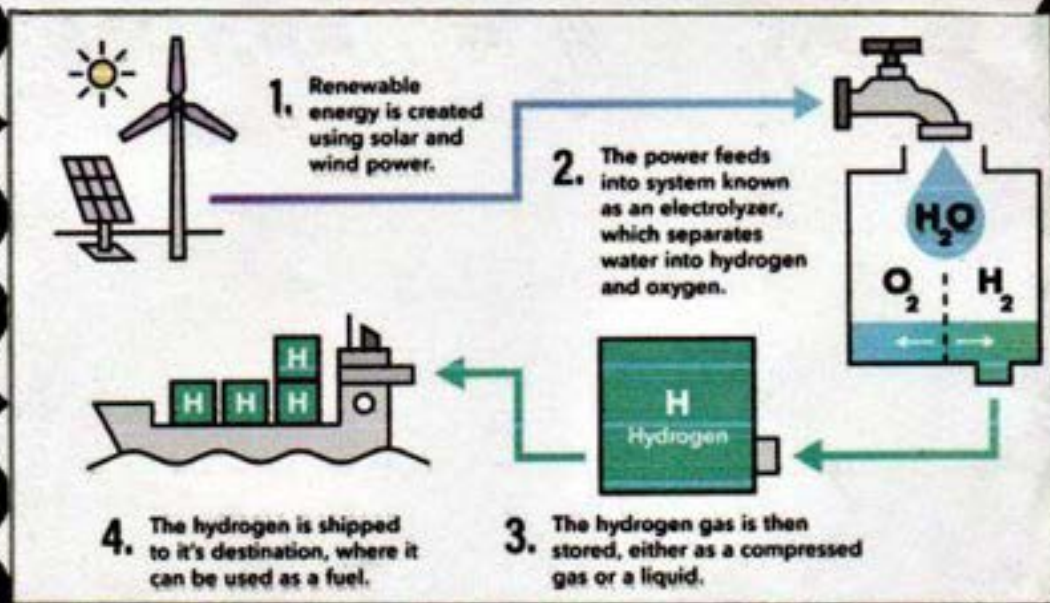




export overseas.

Uses: Hydrogen can be used as fuel, for transport or heating, a way to store electricity, or a raw material in industrial processes.

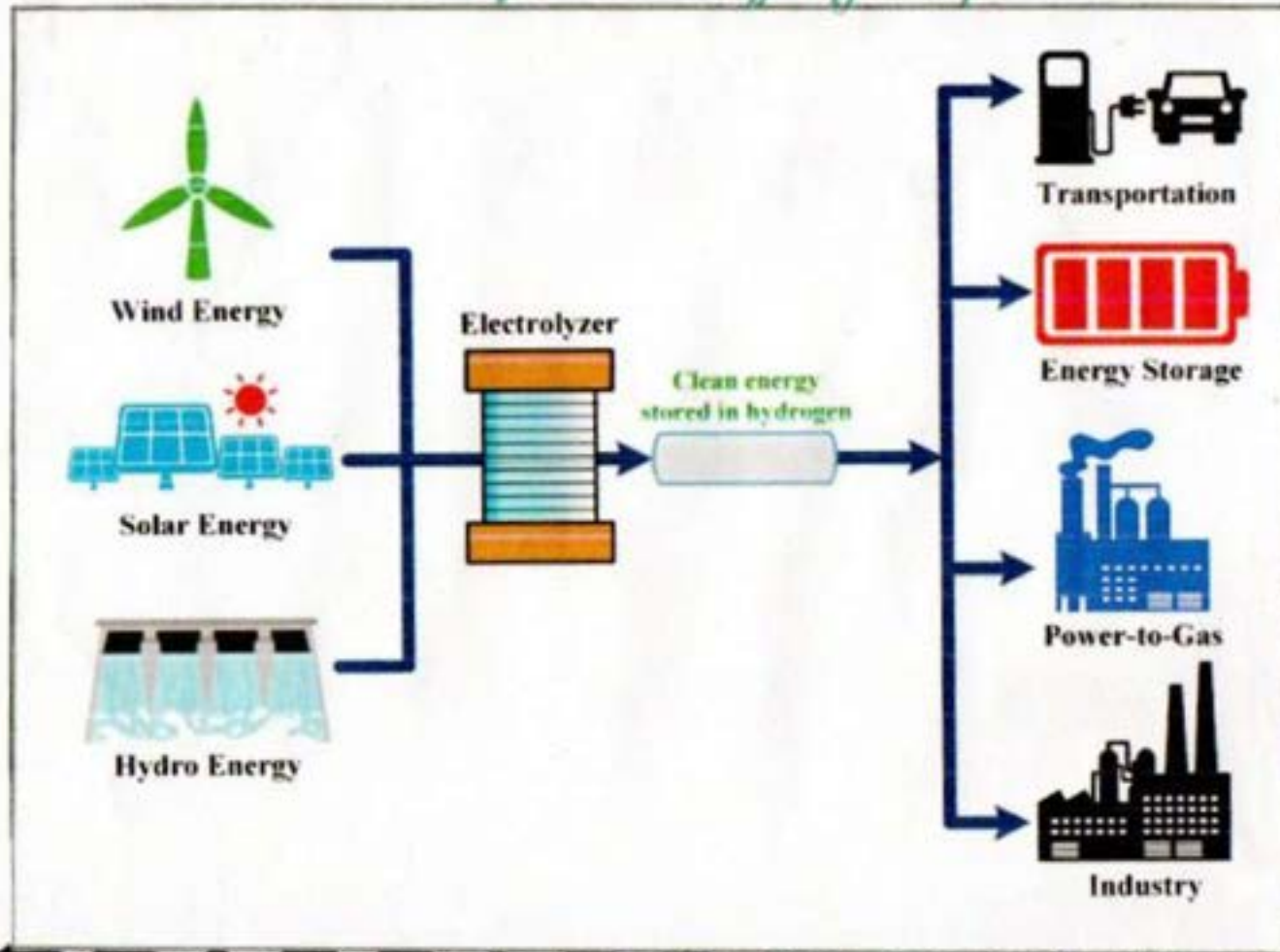
Production of green fuel Hydrogen

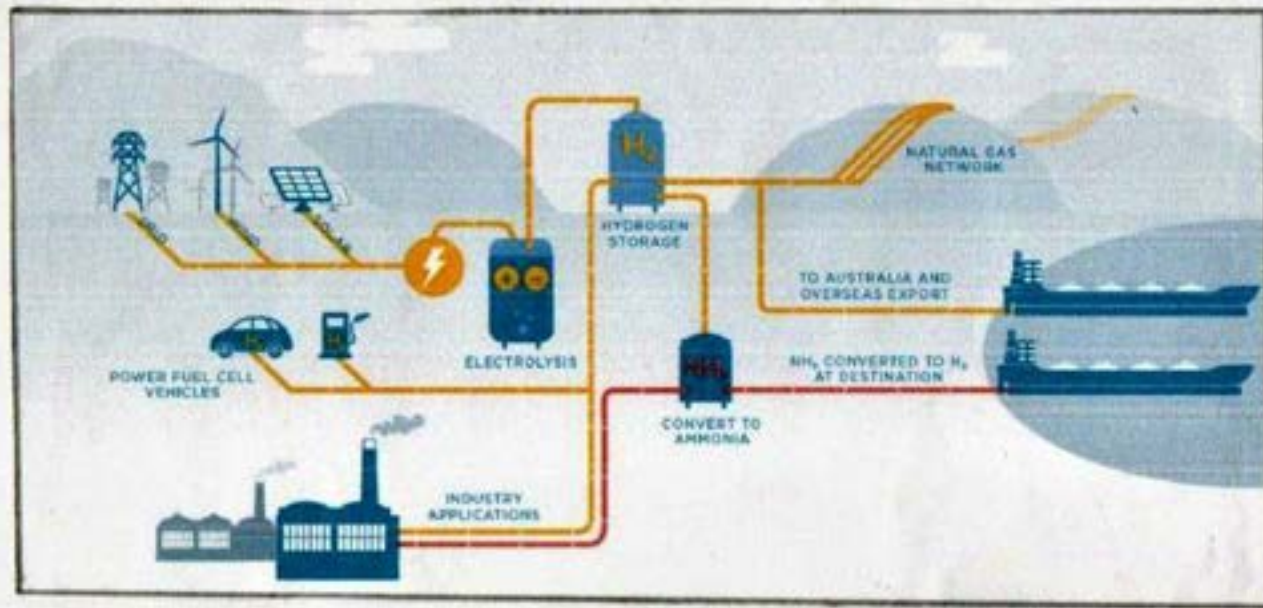
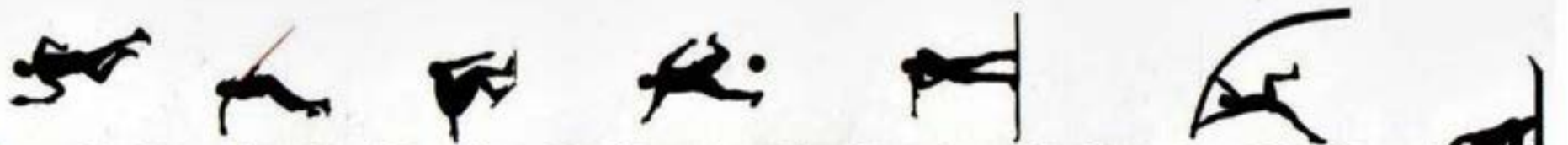


The technology to convert water into renewable Hydrogen (H_2)



The Natural Resources from which Hydrogen is produced





Renewable Hydrogen could provide a fuel that can be stored and transported and be used as 'Feed Stock' to produce chemicals like ammonia. Hydrogen economy plays an important role in Australia's energy transition.





Assi 1 (ii) a. Toyota's hydrogen fuel cell (Mirai)



Toyota's hydrogen fuel cell Mirai at BOC's Brisbane facility.

b. ARENA - Demonstrating electrolyser during Olympics

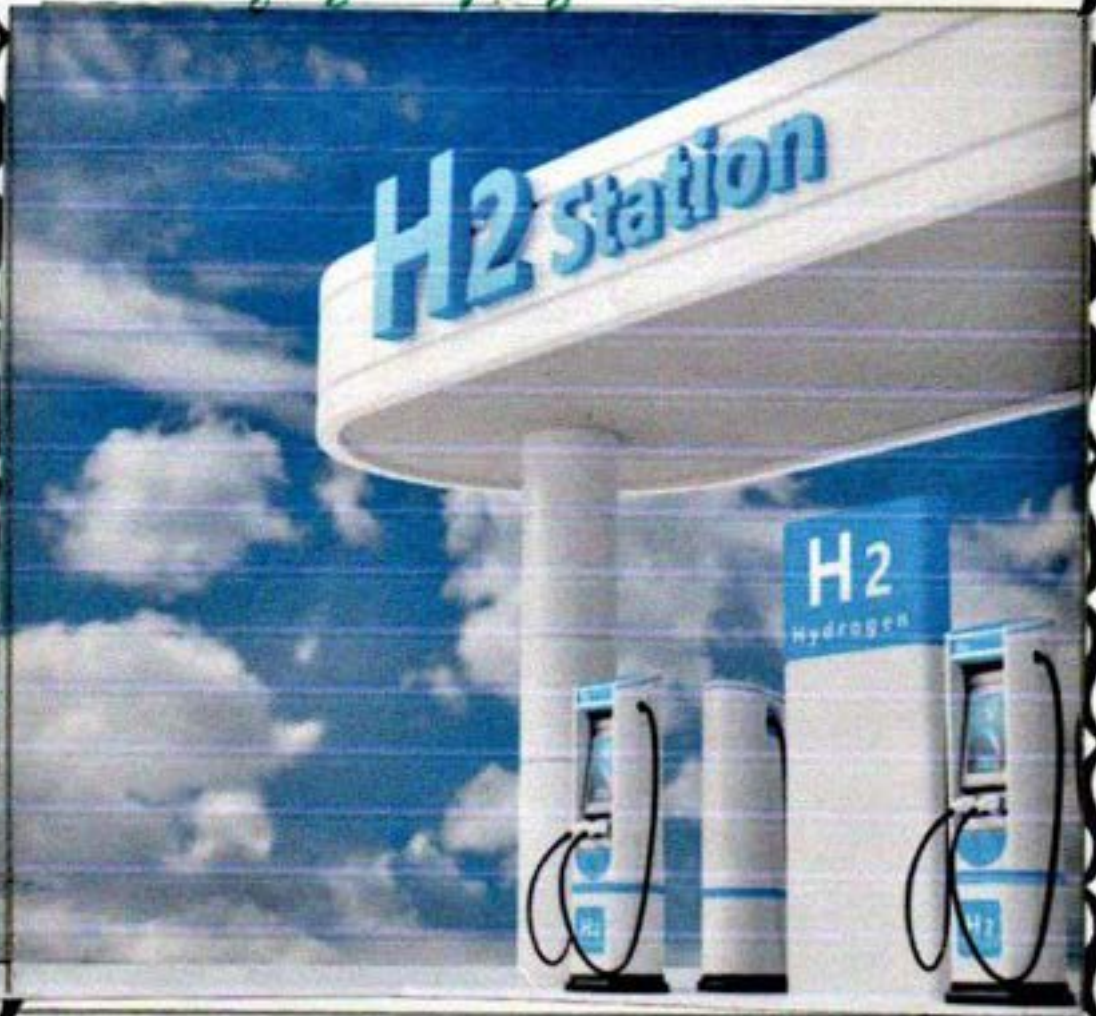


A new hydrogen electrolyser installed at the ARENA facility during Tokyo

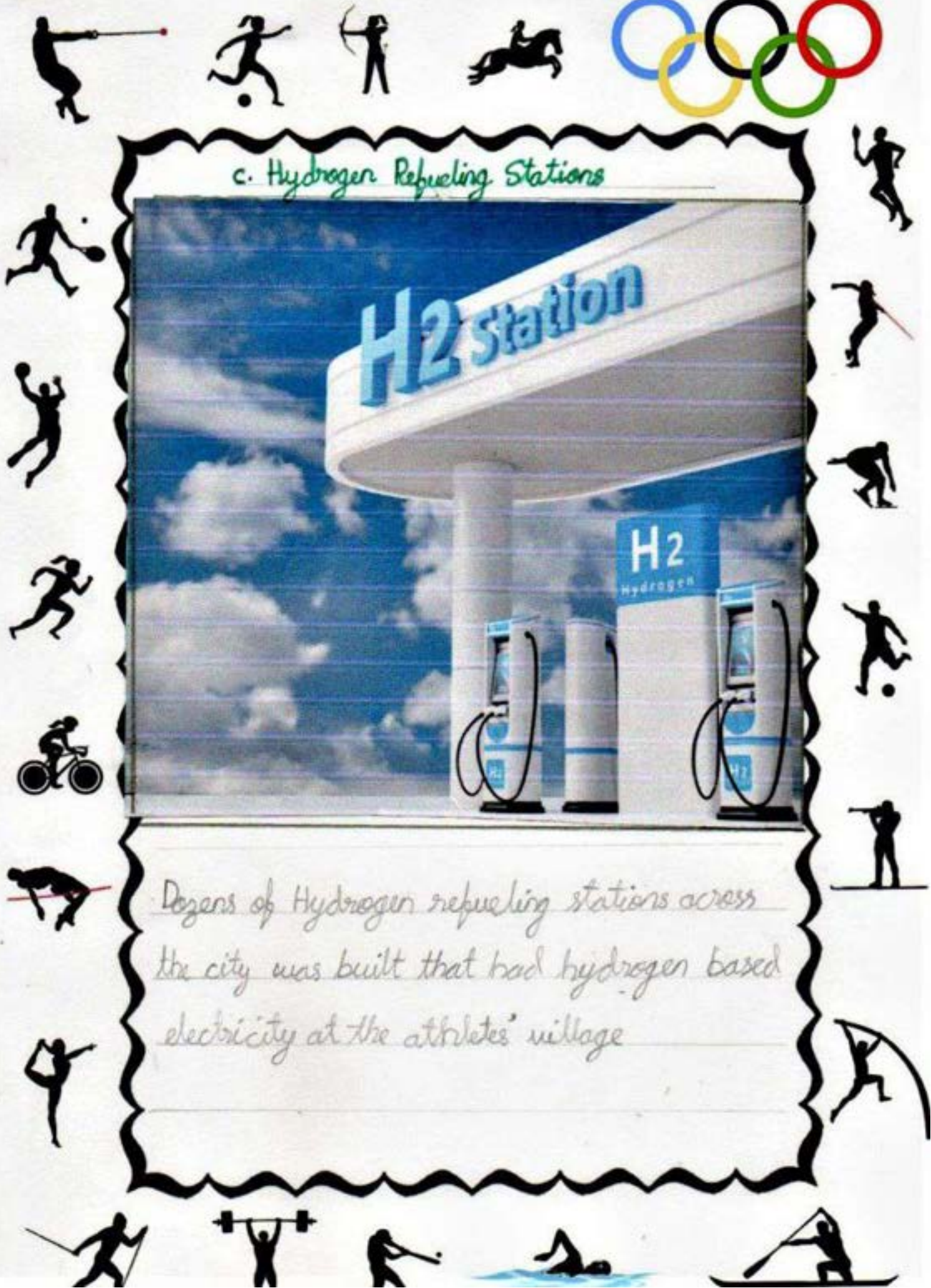




c. Hydrogen Refueling Stations



Dozens of Hydrogen refueling stations across the city was built that had hydrogen based electricity at the athletes' village





d.

Olympic Torch



Materials Used:

The Olympic flame which is a traditional torch relay was fueled with renewable hydrogen. Olympic flame was powered to promote a carbon free future.



Ans: 2 (i) & (ii)

Things made from Reused Materials



1. Marathon podiums made from recycled materials.

Materials Used:

Kengo Kuma designed the center piece national stadium that relied heavily on timber. It is a 3D printed medal podium out of 1.5 m pieces of recycled plastic packaging, weighing 24.5 tons.



2. Olympic Medals :



Materials Used :

The medals awarded to top performers were crafted from upcycled smartphones. The materials used was recycled electronics. Billions of precious metals such as gold and silver are usually discarded every year globally. Tokyo govt. took massive effort to produce 5,000 bronze, silver and gold medals from these recycled materials.



3. Cardboard Bedframes :



Materials Used :

Using lightweight recycled cardboard beds made by the Japanese company Airweave for the athletes' sleeping quarters; using mattresses that can be recycled after use.



4. Olympic Open Ceremony wearing belts



Materials Used:

The athletes' striped belts are made up of recycled plastic water bottles. A patch on the back of the ponks is a nod of plant-based materials and agricultural byproducts free of synthetic plastics. Ralph Lauren designed air-conditioning system into a white jacket to honor opening ceremony.



Ans: 3 a.



Fukuoka City had been using Imazu Landfill to dispose waste from 1975 to 1999. A section of the landfill is now used as a sports park and allotment garden.

Source Hydraulic Sanitary Engineering Laboratory, Faculty of Engineering, Fukuoka University.

Waste landfill technology:

Fukuoka University and Fukuoka City in 1970s produced and applied a semi-aerobic landfill structure for landfills that is sanitary and presents no environmental problem enabling it to be used for parks and open space for sports.



b. Medical Waste Disposal Technology



Medical waste discarded at open garbage dumps



Syringe needles coming out of garbage bags

Column

Containers for the disposal of medical waste (Example)

In order to avoid contamination, plastic containers, cardboard boxes and metal containers are used to dispose of medical waste to prevent contact and assure safety for workers.



Pail Cardboard box Bag



Some of the containers used by medical institutes

Collection and recycling to make diverse products processed by Japan:

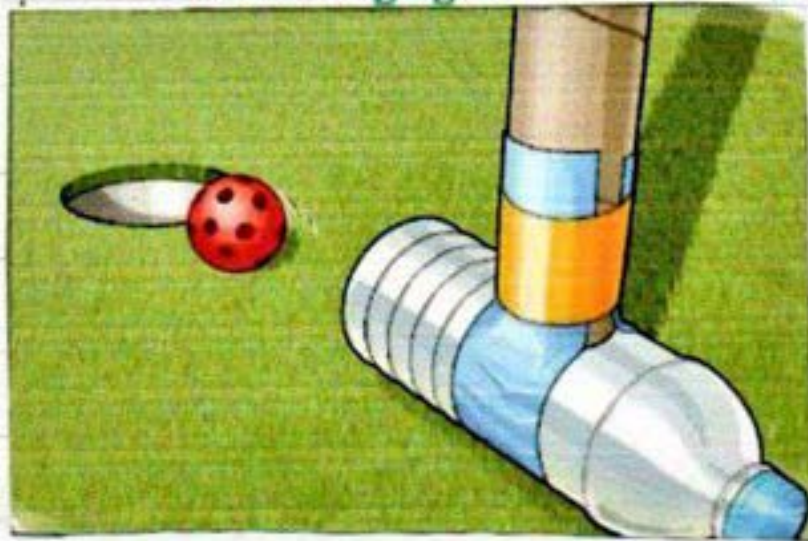
Under the 3R policy (Reduce, Reuse, Recycle), Japan has been collecting PET bottles, food trays, and cans separately



for reuse or recycle resources in the manufacturing of new products.

Ans: 4 (i)

Sport Name : Golf
(With recycled materials ..)





Materials Used :

- Assorted recycle materials : plastic bottles, cardboard boxes and tubes, etc.
- Duct tape and/or glue
- Scissors
- Pencil and paper
- Lightweight plastic or rubber ball (ping pong ball, whiffle ball, etc.) Do not use a heavy ball like a baseball.



Sport Name : Dumbbell



The Materials Used :

- o 1 bag quikrete concrete mix.
- o Water to make the mold
- o Bending steel pipe



Ans 4 (ii) Measures taken to keep the players
safe from Covid :-

1. The Olympics will operate in a bubble - esque environment.
 - > Wear mask at all times.
 - > Maintain social distancing.
 - > Wash hands frequently.
 - > Olympians not to be allowed to take public transportation.
2. The Olympians staying within the Olympic village must take daily Saliva test and temperature to be taken each time when they return.
3. In case, they are tested positive, they either had to enter isolation or go to the hospital for treatment.

