Production Linked Incentive (PLI) Scheme approved for Bulk drugs

In the Indian Union Budget for year 2021-22, INR 5,440 crores have been approved for PLI Scheme for the pharmaceutical sector which deals with preparation, use and sale of medicines.

A pharmaceutical company does a lot of research and testing, which usually takes many years (12 to 20) and spends huge amount of money (millions of dollars) to create just one new drug or medicine for a disease or medical problem. Drugs created in this way are called Brand drugs.

They are very expensive because the company which created it wants to profit from its sale and usually sells the drugs at a premium (higher) price. New brand drugs are usually protected by patents, which are government issued rights that do not allow other companies from making the same drug and selling it in the market for a period of 20 years. This helps the company which did all the hard work of finding the novel drug get the benefit from selling it alone or exclusively in the market. But when this period of exclusivity ends, other companies are free to make the drugs and benefit from selling the same. These drugs made by other companies that work exactly like the brand drug are called generic drugs. (Below: Example of Lipitor, a brand drug developed by Pfizer, to treat Dyslipidemia, later produced generically by India’s Ranbaxy, after the patent on it expired.)

**Indian Pharmaceutical Sector:**
US holds the most patents for brand medicines. But India is the leader in the generic drug market. Generic drugs make up to 71% of the Indian pharmaceutical industry. This makes India, the largest supplier of generic drugs globally earning the nickname “the world’s pharmacy”. Generic drugs are in high demand because, they are cheaper than the brand drugs and exporting them brings in a lot of revenue for the country.
Critical Bulk Drugs:
In order to chemically synthesize these generic drugs, the company needs a lot of basic raw materials known as critical Bulk Drugs. However, India does not manufacture most of these Bulk Drugs and is significantly dependent on importing them from other countries. Government has approved PLI Scheme for setting up the chemical plants for producing these critical Bulk Drugs. The PLI scheme will help to provide incentives (rewards) on sales of products manufactured with in the country without depending on imports from foreign countries. This scheme not only aims to cut down the cost but also make India self-reliant.

Unique Design Competition

Indian Street Vendors using conventional vending carts faced a tough year due to COVID-19 pandemic. The year-round lockdown has made them lose customers because of restriction on mobility. Even if they could go out, hand hygiene, wearing a mask and maintaining social distancing while dealing with customers were important aspect which people considered while buying from the street hawkers and this in turn hampered their sales and affected their livelihood.

In such times, Ministry of Commerce & Industry in collaboration with National Institute of Design (NID), Ahmedabad, organized a competition for designing Street Vending Carts for a COVID-19 era. The aim was to design new and cost-effective cart models to address the challenges faced due to COVID-19. Sixty-six student teams from 5 different NIDs participated in this competition to build such a model cart. Street vending cart for Food Business and for fruit and vegetable vendors were considered under this competition.

Design of the cart had to consider aspects like display of items, packaging of goods, billing while maintaining hygiene, foldability, mobility and compactness of the cart, accessories like dustbin, seat, shade, lighting and power supply to make the cart efficient and attract customers adapting to the changing times. The government is planning a large-scale distribution of these modern carts to street vendors. Some of the models presented in the competition: CHARIOT, APNA CART
Editorial

Hello Dear Readers,
Enjoy your Monday edition!!
Love,

Padma aunty
tcpedit@gmail.com

Solution A: The given structure has 20 cubes.

Solution B: Matchstick problem has 2 solutions

9 - 7 = 2  5 - 7 = -2

Hurray!! And the Monday Master Minds are:

Winners of Spot the differences

Art Corner

Vaidehi Agarwal (Pencil drawing)  Tapaskumar Nishank (Charcoal Sketch)
Monday Masterminds: Brain Tickler

A. Get the frog out of the well.

A frog is at the bottom of a well 12 feet deep. He can jump 3 feet, but every time he jumps 3 feet, he falls back 2 feet. How many jumps will he have to make to get out of the well?

B. In the year 2001, the 10-10-01 was peculiar. It contained only 0’s and 1’s. How many such dates were there in that year? Can you list them? Listing them is optional.

A. 1  B. 3  C. 6  D. 9

Answer at least one question to become a Monday Mastermind

Mini Word Search

Identify the insect:
1. With eight legs
2. Carrier of Malaria
3. Makes natural sweetener
4. With Beautiful wings
5. Destroys wood

Nature Photography

Picture by Shivani Manivannan and Parvathi Elaiyaraja

Send your original nature themed photographs to tcpedit@gmail.com

Spot the difference

Today's Challenge - Spot all the five differences

Learn about the human body: How many bones are there in an adult human body? 206
DIY Science Corner - STEAM BOAT

Grade Level: 5
Material needed:

- Metal Can
- Aluminium Foil
- Straw
- Thermocol Sheet
- Candle
- Glue

Procedure:
1. Cut the thermocol into pieces and stick them together to make a simple boat.
2. Cover the metal can with an aluminum foil on all sides and insert two straws into it. This will act like a boiler.
3. Assemble the boiler and the boat as shown in picture below.
4. Use a dropper to fill the pipes with water, until the water comes out the other side. This indicates that the pipes and boiler are completely filled.
5. Cover the pipes with your finger to keep water from spilling and place the boat assembly in a tub filled with water.
6. Place the candle below the boiler and light the candle so that flame is directly below the water tank.

Observations: The boat is continuously propelled forward with a 'pop' sound.

Why it happens: When the heat is applied, water evaporates, producing steam. The steam is suddenly pushed out of the boiler, making a 'pop' sound and pushes some water out of the exhaust tube, propelling the boat forward. This process would repeat over and over again.

Did you know:
In 1787 USA, John Fitch became the first person to build a steamboat, but his boats were very expensive to build and operate. So, they were not successful. Twenty years later, in 1807, the first successful steamboat named ‘Clermont’, was built by Robert Fulton.

Experiment submitted by Taksh Devani
If you want us to feature your DIY experiments please send it to tcpedit@gmail.com
Try It out – The fun corner

Collect some Pistachio (Pista) shells and paint them in different colours. Use your imagination to make an art out of it. Paste them on a plain paper to create your own **Pista shell Art**. We would love to know what you made. The Pista shell art below was made by Shivani and Chinmaya Manivannan.

![Pista shell Art](image)

Amazing Creatures A-Z

**Dragonflies and Damselflies** Order: Odonata

- More than 5,000 species of dragonflies and damselflies are known.
- Order Odonata meaning Toothed Ones - sharp serrated mandibles.
- Larval stage (nymph) is aquatic and can last up to two years.
- Predator with a 95% hunting efficiency.
- Globe Skimmer capable of migrating across Indian Ocean.
- They catch their prey only while flying and can eat it without landing.
- Expert fliers. They can fly up, down or hover like a helicopter.
- They have the ability to move their four wings independently of each other.
- Huge compound eye provide 360° of vision with just a blind spot behind the tail.

**Picture credits:** Shivani and Chinmaya

**Credits & Answers:** This edition has been reviewed by Gunjan Sharma and Deepika Singh. © All rights reserved. This publication, or any part thereof, may not be referenced or reproduced in any way.

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