UNIT 01: WEATHER WATCH   [REMEU01]
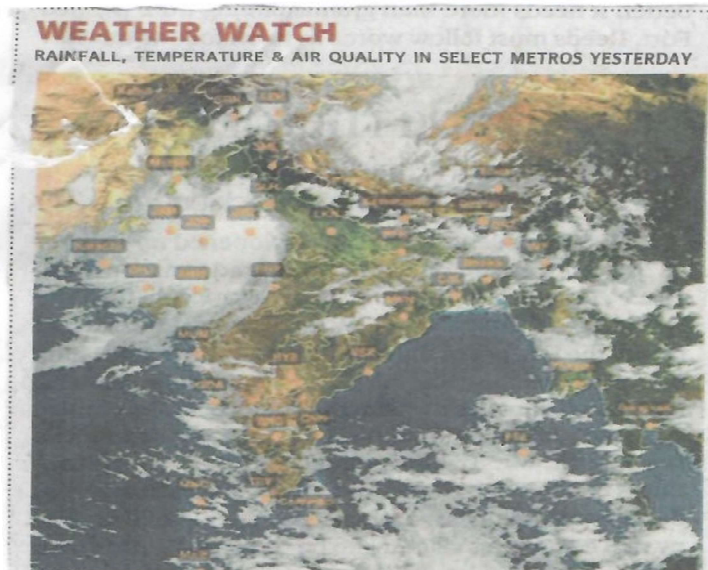
WEATHER WATCH
RAINFALL, TEMPERATURE & AIR QUALITY IN SELECT METROS YESTERDAY

TEMPERATURE DATA: IMD, POLLUTION DATA: CPCB, MAP: INSAT/IMD (TAKEN AT 18.00 HRS)

Forecast for Friday: Heavy to very heavy rain likely at isolated places over Rajasthan, Jammu & Kashmir, Uttarakhand, Himachal Pradesh, Punjab, Haryana, Delhi, Uttar Pradesh, Goa, Gujarat, Madhya Pradesh, Andaman & Nicobar, Tamil Nadu, Kerala, Karnataka, West Bengal and Sikkim

CITY	RAIN	MAX	MIN
Agartala	24.7	30.6	25.6
Ahmedabad	5.6	29.0	25.7
Aizawl	35.0	25.3	19.9
Allahabad	7.6	31.9	27.0
Bengaluru	—	27.6	20.5
Bhopal	67.0	24.5	21.5
Bhubaneswar	—	34.2	27.0
Chandigarh	—	35.2	26.3
Chennai	11.5	38.0	25.1
Coimbatore	—	29.7	22.2
Dehradun	—	33.7	25.0
Gangtok	56.0	23.8	18.0
Goa	93.0	26.2	23.5
Guwahati	1.6	35.6	25.9
Hubballi	—	26.0	21.0
Hyderabad	—	32.6	24.2
Imphal	0.8	27.7	23.6
Jaipur	41.8	30.2	23.5
Kochi	6.6	30.0	24.6
Kohima	—	26.4	—
Kolkata	22.8	30.1	25.6
Kozhikode	27.7	31.2	23.0
Kurnool	—	35.3	25.8
Lucknow	3.0	33.2	25.7
Madurai	0.4	38.6	26.2
Mangaluru	65.5	26.2	23.0
Mumbai	8.2	30.8	25.2
Mysuru	3.6	27.5	19.8
New Delhi	10.8	34.8	24.8
Patna	2.3	33.0	26.8
Port Blair	1.8	30.7	24.3
Puducherry	0.2	37.2	26.0
Pune	0.2	28.1	22.5
Raipur	0.2	27.5	24.0
Ranchi	—	30.2	22.0
Shillong	3.6	24.6	17.2
Shimla	—	22.5	17.6
Srinagar	—	30.6	19.0
Thiruvananthapuram	0.2	31.7	24.2
Tiruchi	—	38.3	26.6
Vijayawada	3.5	35.1	25.0
Visakhapatnam	—	32.4	27.8

(Rainfall data in mm; temperature in Celsius)

Pollutants in the air you are breathing   Yesterday

CITIES	SO₂	NO₂	CO	PM2.5	PM10	CODE
Ahmedabad	51	.66	.65	104	135	■
Bengaluru	04	.21	.42	93	—	■
Chennai	29	.22	.47	44	—	■
Delhi	—	100	106	46	48	■
Hyderabad	59	.47	.10	42	82	■
Kolkata	21	.43	.19	66	70	■
Lucknow	07	.07	.79	37	—	■
Mumbai	12	.17	103	18	45	■
Pune	74	8	.67	58	58	■
Visakhapatnam	—	—	—	—	—	

In observation made at 6.00 p.m., Manesar, Haryana recorded an overall air quality index (AQI) score of 148 indicating an unhealthy level of pollution. In contrast, Damoh, Madhya Pradesh recorded a healthy AQI score of 15

Air Quality Code: ■ Poor   ■ Moderate   ■ Good (Readings indicate average AQI)

SO₂: Sulphur Dioxide. Short-term exposure can harm the respiratory system, making breathing difficult. It can affect visibility by reacting with other air particles to form haze and stain culturally important objects such as statues and monuments.

NO₂: Nitrogen Dioxide. Aggravates respiratory illness, causes haze to form by reacting with other air particles, causes acid rain, pollutes coastal waters.

CO: Carbon monoxide. High concentration in air reduces oxygen supply to critical organs like the heart and brain. At very high levels, it can cause dizziness, confusion, unconsciousness and even death.

PM2.5 & PM10: Particulate matter pollution can cause irritation of the eyes, nose and throat, coughing, chest tightness and shortness of breath, reduced lung function, irregular heartbeat, asthma attacks, heart attacks and premature death in people with heart or lung disease

Source: The Hindu

Use the information in the figure above to answer the following questions:

Question 1 [Q01] : Which of the following state is likely to experience heavy rainfall?
  A. Assam
  B. Telangana
  C. Tamil Nadu
  D. Arunachal Pradesh

Question 2 [Q02]: Which of the following cities witnessed the maximum difference of temperature (range)?
  A. Bengaluru
  B. Bhubaneswar
  C. Chennai
  D. Thiruvananthapuram

Question 3 [Q03]: What of the following group of cities received an equal amount of rain?
   i.   Mysuru and Shillong
   ii.   Guwahati and Port Blair
   iii. Mysuru, Shillong and Vijaywada
   iv.   Puducherry, Pune, Raipur and Thiruvananthapuram
  A. i and iv
  B. i and iii
  C. ii and iv
  D. iii and iv

Question 4 [Q04]: What is the advice given to people dwelling in cities with moderate AQI?
   i.   Avoid indoor activities and go for a walk.
   ii.   Avoid prolong outdoor exertion.
   iii. Not expect any health effects.
   iv.   Take bikes even for short trips.
  A. Only i
  B. ii and iv
  C. Only ii
  D. i and iii

Question 5 [Q05]: Residents of which of the following city are likely to have health issues related to breathing and visibility?
  A. Lucknow
  B. Hyderabad
  C. Pune
  D. Ahmedabad

UNIT 02: EXPEDITION [REMEU02]

An adventure story

They'd been trapped by ice for 36 days and had been on their own for longer than that, ever since a storm separated them from the ship and the rest of the crew on their expedition. Karl was in a pitiful state—lost, weak, frightened, and shivering from unrelenting cold. He was also suffering the painful effects of frostbite. Suddenly, ice cracked enough for the boat to break loose and begin to bob gently in the frigid sea. The crew cheered their good fortune. No longer stuck in the ice, their chances of survival had edged up a notch. But Karl understood that the struggles had not ended, as medical supplies were nearly gone and there was barely any food left. If that weren't terrifying enough, the maps were lost, too. The crew navigated icy waters until their hands bled and muscles ached. For days, Karl saw nothing in the muted, constant light but other ice floes. Then, finally, he detected a sound in the stillness that he hadn't heard for months: the cawing of birds. That sweet sound signaled that land was near. All were exhilarated! The land they found was snow-covered and flat. The crew rowed along its barren coast until they spotted the mouth of a river. Karl and the men entered, presuming it would lead to a village and safety. On they plodded, ever more hopeful of survival.

Question 6 [Q01]: What does the story depict?

- A. Adventure and sports
- B. Struggle and happiness
- C. Anxiety and hope
- D. Sea and sand

Question 7 [Q02]: The narrator sound unenthusiastic when he writes '. . . *their chances of survival had edged up notch'*. Why?

……
……
………………………

Question 8 [Q03]: Where does the story take place? Give possible explanation for the answer.

……
……………….

UNIT 03: HAVE YOU EVER SEEN?   [REMEU03]

> **Read the poem.**
> **Then answer the questions that follow:**
>
> <div align="center">
>
> Have you ever seen a sheet on a river bed?
>
> Or a single hair from a hammer's head?
>
> Has the foot of a mountain any toes?
>
> And is there a pair of garden hose?
>
> Does the needle ever wink its eye?
>
> Why doesn't the wing of a building fly?
>
> Can you tickle the ribs of a parasol?
>
> Or open the trunk of a tree at all?
>
> Are the teeth of a rake ever going to bite?
>
> Have the hands of a clock any left or right?
>
> Can the garden plot be deep and dark?
>
> And what is the sound of a birch's bark?
>
> </div>
>
> <div align="right">
>
> *-Anonymous*
>
> </div>

Question 9 [Q01]: Which type of hose is the poet talking about in the poem?

     A. Pipe
     B. Sprinkler
     C. Can
     D. Spade

Question 10 [Q02]: Where are you likely to find a deep and dark plot?

     A. Garden
     B. Graph
     C. Tunnel
     D. Mystery

Question 11 [Q03]: With reference to the poem, which one of the following is an incorrect match?

     A. Foot of a mountain- big, sloppy, green
     B. Hands of the clock- palm, left, right
     C. Trunk- big, woody, strong
     D. Needle's eye- small, minute, metallic

Question 12 [Q04]: Read the following statements:

      i. The poem is ironical because it uses adjectives that are unrelated to the nouns
     ii. The poem is humorous because of the use of funny puns
     iii. The poem highlights multiple use of words
     iv. The poem is confusing as there is no clarity

Which statements are correct?

     A. i and ii are correct
     B. ii and iii are correct
     C. ii and iii are correct
     D. ii and iv are correct
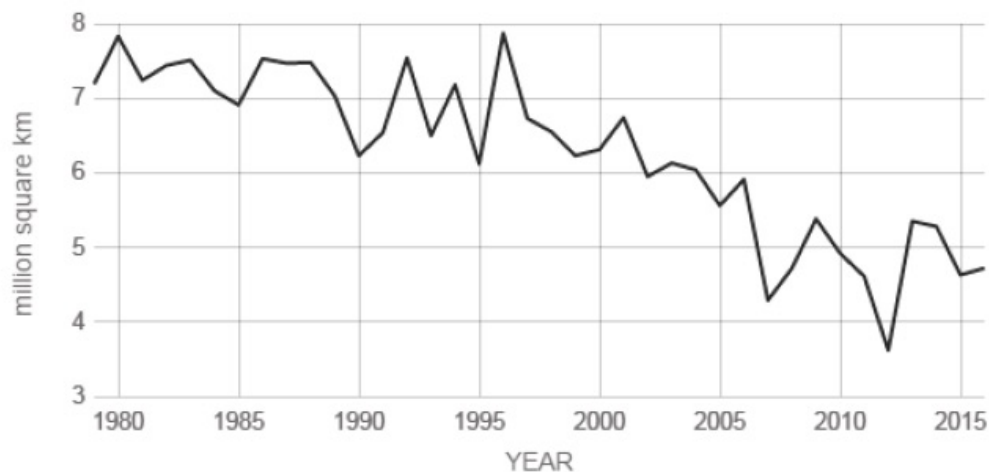
PRACTICE
CREATIVE AND CRITICAL THINKING

UNIT 01: ICE CAPS [SCMEU01]

Polar ice caps are dome-shaped sheets of ice found near the North and South Poles. They are formed because high-latitude polar regions receive less heat from the Sun than other areas on Earth. As a result, average temperatures at the poles can be very cold.

The polar ice caps contain the majority of Earth's supply of freshwater. Unfortunately, average temperatures at the poles have begun to rise in recent years due to changes in the environment. As temperatures rise, the polar ice caps start to melt and break apart.

The effects of global warming in the Arctic, or climate change in the Arctic include rise in the air and water temperatures, loss of sea ice, and melting of the ice sheet. Related impacts include ocean circulation changes, increased input of freshwater, and ocean acidification. Indirect effects through potential climate change may result in a greater frequency of extreme weather events (flooding, fires and drought), ecological and biological changes, biological migrations and extinctions, adverse impact on health, displacement and security issues for all living beings.

Below is a chart showing **decline in ice-sheet area over the years**.

Use the information given in the above passage and graph to answer the following questions.

Question 1 [Q01] : Name a gas responsible for global warming.

....

Question 2 [Q02] : Select the major indicators of Global Warming?
  i.   Drought
  ii.   Adverse effect on Human health
  iii. Increased input of fresh water
  iv.   Melting of ice-sheet

Tick the correct option.

A. iii and iv

B. i and ii

C. i and iii

D. ii and iv

Question 3 [Q03] : How does global warming leads to ocean acidification?

SEP...

....

....

Question 4 [Q04] : When was the decrease in ice-sheet maximum between 2010 to 2015?

A. 2010-11

B. 2011-12

C. 2012-13

D. 2013-14

E. 2014-15

Question 5 [Q05] : What is the approximate ice-sheet area expected at the end of 2020 assuming it follows the same pattern as between 2010-2015?

A. Nearly 3 million square km

B. Nearly 4 million square km

C. Nearly 5 million square km

D. Nearly 6 million square km

UNIT 02: CORROSION [SCMEU02]

We are all witness to rusting of iron objects all around us. However, the famous iron pillars near Qutub Minar in Delhi fascinate us. A chemical analysis of these Iron pillars and Iron implements belonging to the Gupta Empire, showed that ancient Indians knew how to produce Iron that did not corrode. It has been found that this is due to the presence of higher than normal amounts of phosphorus in Iron. This enabled the formation of rust resistant coating on iron surface on exposure to air. This prevents further corrosion.

Question 6 [Q01] : Corrosion is primarily a …………………………….. change. (physical / chemical change)

Question 7 [Q02] : When iron rusts, a brown compound forms (Fe_2O_3). Give the scientific name for this.

…………….………………………………………………………………………………

Question 8 [Q03] : Most methods used nowadays to prevent iron objects from rusting is by using a physical barrier. This involves covering the iron object with another substance.

What all needs to be cut off to prevent rusting?

    i.   Air

    ii.   Moisture

    iii.   Chemicals

    iv.   Pollutants

A. i and iv

B. i and iii

C. i and ii

D. ii and iii

Question 9 [Q04] : Some iron objects are coated with molten zinc to prevent rusting. Name this preventive method.

…………….………………………………………………………………………………

Question 10 [Q05] : Match the most suitable method for preventing the following from getting corroded:

I.	Metallic Gate	a.	Grease
II.	Bicycle Handle	b.	Paint
III.	Machines	c.	Chromium Plating

Tick the correct option.

A. I-b, II-c, III-a

B. I-a, II-b, III-c

C. I-c, II-a, III-b

D. I-b, II-a, III-c

UNIT 03: ORNAMENT FAIR [MAMEU03]

Rani's mother taught her how to make handmade ornaments to sell at a craft fair.

Rani rented a table at the fair for Zed 30 (Zed is a currency in ZEDLAND) and set up her work station.

Each ornament that she makes costs approximately Zed 2.50 for materials. She sells each ornament for Zed 6.00.

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Question 11 [Q01] : If x represents the number of ornaments sold at the craft fair, which of the following expressions would represent Rani's profit?

    i. $6x - 30$
    ii. $6x - 30 - 2.50\,x$
    iii. $4.50x - 30$
    iv. $-30 + 6x - 2.50x$
    v. $3.50x - 30$

Tick the correct option.

A. i, iii, v only

B. ii, iii, v only

C. ii, iii, iv, v only

D. ii, iv, v only

Question 12 [Q02] : Rani does not want to lose money on her business. Her mother told her that she needs to sell enough ornaments to at least cover her expenses (cost for materials and rent of the table). Rani figures out that if she sells 8 ornaments, she covers her expenses and does not lose any money. Do you agree? Show calculations to support your answer.

…………………………………………………………………………………………………

Question 13 [Q03] : Rani feels that if she earns a profit of Zed 40.00 at this craft fair, her business will be successful enough for her to branch out to other craft fairs.

How many ornaments does she have to sell to earn a Zed 40.00 profit?

    A. 18

    B. 20

    C. 22

    D. 21

Question 14 [Q04] : During the fair, there is sudden rain pour for which Rani and her mother had to rent a big umbrella for the work station, which costed Zed 2 for an hour. Rani had to hire the umbrella for seven hours.

How many ornaments in total should be sold to keep the profit of Zed 40.00?
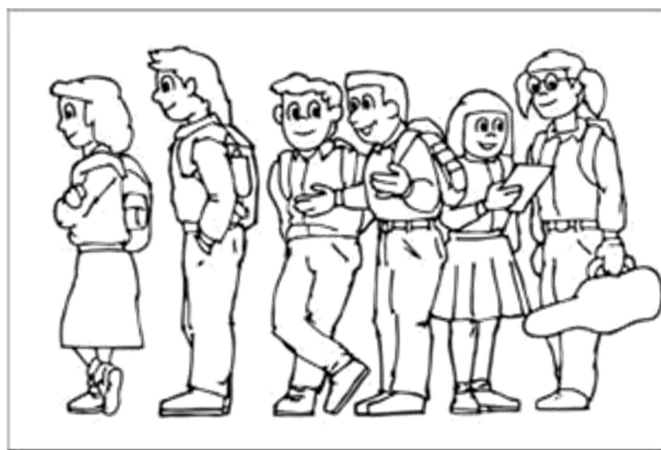
    A. 24

    B. 20

    C. 30

    D. 32

UNIT 04: STANDING IN A ROW [MAMEU04]

Students numbered from 1 to 30 were asked to line up in a straight line.

The first student in the line was asked to leave the line, the second student remained.

The third student was asked to leave the line, the fourth student remained and so forth.

This process was then repeated until there was only one student left in the line.

Question 15 [Q01] : What was the number of the only student left in the line?

[1]
SEP ....

....

UNIT 05 : JOHN'S BIRTHDAY [MAMEU05]

John's mother invited his 10 friends with their mothers to celebrate his 12th birthday. They all gathered in a restaurant and only 3 friends were accompanied by their mothers. The menu of the restaurant is given below:

Extra Value MEALS (new) | Includes Medium Fries and Coke™ pet Bottle*

HAPPY MEAL™
Includes a Burger+Mazza/Ice Tea+Toy

BURGERS (new) Extra Value MEALS
McAloo Tikki 25
McVeggie 65
Chicken McGrill 35
McChicken 75
Filet-O-Fish 95

Extra Value **MEALS** (new)
Mexican Spice Veg 75
McSpicy Paneer 109
Mexican Spice Chicken . . 140
McSpicy Chicken 109
Chicken McNugget 140
Chicken Wrap 140

DESSERTS
Soft Serve 55
Choclate Brownie. . 65 with Soft Serve
McFlurry 75
McShakes
Small 55
Medium 70
Large 85

BEVERAGES
Mazza 17
Packaged Drinks 17
Coke Pet Bottle. 29
Diet Coke 41
Cold Coffee. 49
Ice Tea 40
Minute Maid 35

FRENCH FRIES
Small 50
Medium 60
Large 70

TOPPINGS
Extra Cheese/ 15
Sauce/Toppings
Extra Chicken 13
McNuggets Dip
Extra McFlurry 20
Toppings

We now take orders from 7.00 am - 12.45 am everyday***
Terms and condition apply : McShakes™ are available only at select outlets.Please check availability before ordering. Delivering time may depend upon existing operating condition.

1 SOFT SERVE FREE ON ORDERS Rs. 300/- and above

Combo Meal

1 MCALOO TIKKI BURGER, 1 SMALL FRENCH FRIES, 1COLD COFFEE FOR RS. 125

Question 16 [Q01] : How many people are part of the Birthday celebration?

    A. 13

    B. 14

    C. 15

    D. 16

Question 17 [Q02] : John's mother went to place the order. She ordered 1 one Mc Aloo Tikki Burger, 1 cold Coffee and 1 Small French Fries for all.

If GST on food items is 18%, then the total bill amount paid by her is

    A. Rs. 1860 .60

    B. Rs.2194.80

    C. Rs. 1900.50

    D. Rs. 2150.05

Question 18 [Q03] : The cost of one combo meal which includes one Mc Aloo Tikki burger, one small French fries, one cold coffee for **Rs.** 125. Do you think John's mother should buy a combo meal for all?

    A. Yes

    B. No

Question 19 [Q04] : The special scheme going on the restaurant says **that if Rs. 300/- or above is spent only on food items, then you will get 1 soft serve free.** Using this special scheme, how John's should mother split her bill in order to redeem this offer maximum number of times.

    A. 6

    B. 8

    C. 7

    D. 5

Question 20 [Q05] : How many more soft serves John's mother needs to buy so that each one of them gets 1 soft serve. (**She can also redeem the same offer, while ordering more soft serve**).

    A. 10

    B. 9

    C. 11

    D. 8

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