



All the best



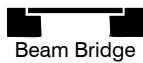
for your exam!



Naturally found in tropical areas, a species of fig tree form 'living bridges' with their roots across rivers. Local communities have planted these trees near river banks to serve as natural suspension bridges.

A town in the south, called Tamenglong, is known as the land of the Hornbill. Found in abundance here, the feathers of the Great pied Hornbill and Oriental pied Hornbill are often part of the outfits and head gear of the people here.

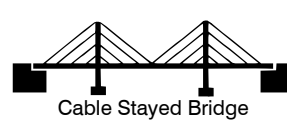
Their popular dances, with nature themes, include Rangdai Lam (Dance of Hornbill), Maukana lam (Hawk dance), and Khuairuna lam (Bee dance).



Beam Bridge



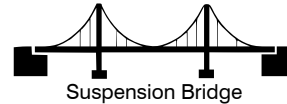
Cantilever Bridge



Cable Stayed Bridge



Arch Bridge



Suspension Bridge

Schematic drawings of a few kinds of bridges are shown above.

Two towns are separated by a sea-water creek, 2 km wide at points A and B. Across this creek we need to build a bridge that will support the weight of about 500 cars at a time. The creek is affected by the ocean tides. At high tide, the depth of the creek is around 45 meters.



1. Draw the most suitable bridge from A to B.
2. What factors would you consider while building this bridge?
3. What are the special challenges in constructing a bridge to the above specifications?
4. List the points to show why your bridge is suitable.
5. If the data is insufficient to decide which bridge, what more information would you need to design the bridge?

You can answer as many questions as you like. It is not necessary to answer all the questions.

Image source: Saravask, Linuserist, Rursus, chris, gaikwadsw, Vishma thapa, Vinayak Hegde from commons.wikimedia.org.,  
Bridge diagrams are adapted from wyckoffschools.org/stem-grade-8/2-types-of-bridges, Google Earth.

### Editorial team

Chitra Natarajan, Shraddha Ghumre, Adithi Muralidhar,  
Geetanjali Date, Rafikh Shaikh, Manoj Nair.

### Today's attraction: Fort Jadhavgadh

You have been in and around Pune over the last few days. To the north-east you went to GMRT, while some of you went to Sinhagadh to the south-west of Pune. As you travel to Jadhavgadh, you will have some glimpses of the city and the surrounding hills on the south-east. While passing along the Dive Ghat, you will see the centuries-old 'Mastani' lake, and the historic temple by its side. The city of Pune has places of worship of all major religions practiced in India: Masjids, Gurudwaras, Churches, Synagogues, and Temples.



Mastani Lake en route Fort Jadhavgadh

People get together here at different times of the day to worship the reigning deity, to celebrate festivals or certain rites of passage, or to listen to mythological story-telling or religious discourses. The temple names are historical, and may sound funny even to Indians. For instance, ask your guides if they know any stories about the 'Khunya Murlidhar' temple. We are sure you will have much more to explore! We would love to hear from you of what you enjoyed on the excursion, and of things that reminded you of something from your town or country. Do 'write to us' students, and we'll try to share it with everyone in the next issue of Vigyan Beats. Leaders can mail us at [vigyan.beats@gmail.com](mailto:vigyan.beats@gmail.com).

### Today @ IJSO

Practical exam - Sports activity



- Sports activity venue: Shri Shiv Chhatrapati Sports Complex, Balewadi, Football Stadium.

Practical exam observation - Fort Jadhavgadh - IB meeting

- Buses will leave from your hotel at 09.00 hrs.
- The journey takes about 90 minutes each way.  
Dinner at Pool Deck.  
Breakfast on 10 December at Sabha.



# Snapshots



The 'Village Haat' Panorama

A day out @ Katraj Zoo

## Student Speak @ Graffiti Board

What is a bug's favourite music band?

Answer: The Beatles

- Anonymous

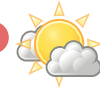
## Winner of Caption Contest

Kyaw Maung Maung Tet Toe  
(Myanmar)

## Today's weather

Sunrise: 06.55AM

Sunset: 05.58PM



Max Temp: 28° C

Min Temp: 10° C

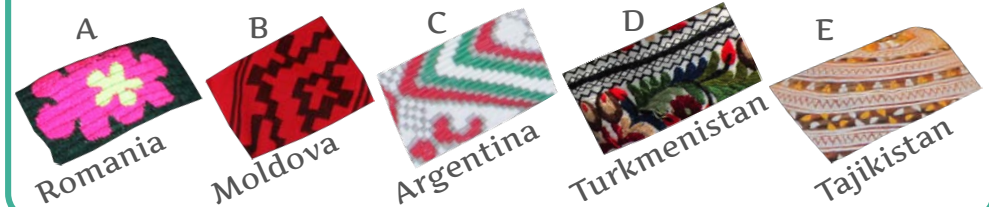
Sky condition would be clear

Source: www.imdpune.gov.in

### A KEEN EYE

Following are some beautiful embroidery patterns. You may have noticed these during the opening ceremony. Some of your friends from different countries wore outfits with these patterns. Match the pattern to their respective country. Come on, start asking around!

Note: Students from countries whose embroidery designs have been featured here, are expected to match the other patterns.



### Zoom In

## Winners of Write to us from Issue 6

The minimum number of crossings you need to make in order to figure out the matching ends of all the ten wires is 2. Congratulations to Po Han Lin and Ching Wei Huang of Chinese Taipei. You got the answer right! But the explanation you gave was a little vague. Why don't you write to us again with a detailed explanation? The rest of you now know that the answer is 2. Can you explain how?

## North East India

In the north-east of India lies the wettest place on planet Earth. Cherrapunji and its nearby regions have received as much as 26000 mm of rainfall in a year! This extreme rainfall is largely attributed to orographic rain, that is caused when masses of air are pushed by wind and forced up elevated land formations like mountains. This lift of air results in adiabatic cooling (without losing heat to outside), followed by condensation and precipitation.



This region supports high floral and faunal biodiversity. Altitudes from the foothills to high Himalayan mountains and deep river valleys, unique soil conditions coupled with high rainfall and humidity, have led to a rich orchid diversity of over 800 species in north east.



Rice, which usually needs abundant water, is the dominant crop in this region. Even alcoholic beverages are made mainly from rice and millets! But most local people rear goats, pigs, fowls, and ducks, all of which form part of their diet. Wild animals, like deer, bison, wild pigs found in abundance in these regions are also hunted for food.

