RBI Grade B 2025 Descriptive English-Recollected Questions

Descriptive English

Essay Writing

Q1. Write an Essay of about 600-620 words on any one of the following topics: (40 Marks)

A. India committed to reducing the emissions intensity of its GDP by 45% by 2030 (from 2005 levels) as part of its updated Nationally Determined Contributions (NDCs). What is the way forward?

B. Shift in Advertisement strategies from paper billboards to digital billboards. Role of technological change in Media.

C. How can youngsters help older people in keeping up with times in Education sector?

D. We are copying startups of western countries. Are such startups relevant for developing countries like India?

Precis Writing

Q2. Make a precis based on the given passage in 180 – 200 words: - (30 Marks)

The Amazon rainforest is inching toward a "hypertropical" climate regime that has not existed on Earth for at least 10 million years, new research suggests.

Scientists predict this regime will cause more frequent and extreme droughts, which could lead to mass tree dieoffs. By 2100, hot droughts could bake the Amazon for 150 days of the year, extending even into the wet season, according to a study published Wednesday (Dec. 10) in the journal Nature.

"When these hot droughts occur, that's the climate that we associate with a hyper tropical forest, because it's beyond the boundary of what we consider to be tropical forest now," study lead author Jeff Chambers, a professor of geography at the University of California, Berkeley, said in a statement.

Scientists think a hyper tropical climate last existed between 40 million and 10 million years ago, during the Eocene and Miocene periods. The average global temperature during the middle Eocene was 82 degrees Fahrenheit (28 degrees Celsius) — 25 F (14 C) warmer than the average today — and previous research suggests forests near the equator had fewer mangroves and evergreen trees.

Currently, the Amazon rainforest experiences hot drought conditions a few days or weeks of the year. But due to climate change, the region's dry season — which typically lasts from July to September — is getting longer, and the annual proportion of hotter-than-normal days is increasing.

Chambers and his colleagues analyzed 30 years of temperature, humidity, soil moisture and sunlight intensity data from a patch of forest north of Manaus, a city in the heart of the Brazilian Amazon. The researchers also examined information from sensors that measured water and sap flow inside tree trunks at this site, which helped them understand how the trees coped with drought conditions.

During droughts, trees struggled to access water and stopped absorbing carbon dioxide (CO_2), the researchers found. That's because evaporation rates surged during droughts, reducing soil moisture. Trees responded by closing the pores on their leaves that control water and gas exchange with the atmosphere, so they preserved water. But this simultaneously blocked CO_2 absorption, which in plants is necessary for tissue growth and repair.

As a result, when drought conditions were extreme, a proportion of the trees died from CO_2 starvation. And when soil moisture dropped below a threshold of 33% meaning only one-third of the soil's pores were filled with water — trees also developed bubbles in their sap that were akin to clots in human blood vessels, preventing normal circulation inside the plants' fluid-filled xylem.

"If there are enough embolisms, the tree just dies," Chambers said. The soil moisture threshold leading to this collapse was remarkably consistent across two El Niño years in 2015 and 2023, and it matched thresholds measured at another study site in the Amazon. "That was really surprising to everyone," he said.

Slow-growing trees like the Shihuahuaco (Dipteryx micrantha) are more resistant to drought conditions than fast-growing trees. (Image credit: Angela Ponce for The Washington Post via Getty Images)

Annual tree mortality in the Amazon rainforest is currently just above 1%, but it could rise to 1.55% by 2100, the researchers found. This may seem insignificant, but it makes a huge difference on the scale of the entire rainforest, Chambers said.

Fast-growing trees were more vulnerable to hot droughts than their slow-growing counterparts, because they needed abundant water and CO_2 to sustain this growth. This suggests slow-growing trees, such as the yellow ipê (Handroanthus chrysanthus) and the Shihuahuaco (Dipteryx micrantha), will eventually dominate the Amazon as temperatures rise — if these trees can cope with increasing water stress and the rate of temperature change, that is.

The results indicate that rainforests in other parts of the world, such as western Africa and Southeast Asia, may also be transitioning to a hyper tropical climate regime. This shift has dramatic implications for Earth's carbon cycle, because rainforests absorb huge amounts of CO_2 that would otherwise end up in the atmosphere.

The predictions of what could happen to the Amazon by 2100 assume negligible reductions in CO_2 emissions, so "it's up to us to what extent we're actually going to create this hyper tropical climate," Chambers said. "If we're just going to emit greenhouse gases as much as we want, without any control, then we're going to create this hyper tropical climate sooner."

Reading Comprehension

Q3. Read the given comprehension and answer the questions that follow: - (30 Marks)

In the Middle East, Africa, and elsewhere, regions with severe water shortages make extensive use of desalination facilities that process seawater into usable freshwater. The Japanese city of Fukuoka, which has no major river nearby, has also adopted desalination technology to solve its frequent water supply issues. But Fukuoka's desalination plant is very different from other facilities around the world: along with freshwater, it also generates electricity. How did Japanese engineers put two previously unused wastewater streams to work creating renewable energy through osmotic power generation?

The Uminonakamichi Nata Seawater Desalination Center (Mamizupia) has served the Greater Fukuoka metropolitan area since 2005. The plant was built to address the lack of readily available freshwater in Greater Fukuoka, which has 2.6 million residents but no large rivers nearby. Mamizupia can produce around 50,000 cubic meters of freshwater daily—enough to meet the needs of some 250,000 people.

HIROKAWA Kenji heads Mamizupia for the Facilities Department at the Fukuoka District Waterworks Agency, which manages Greater Fukuoka's water supply. According to Hirokawa, concentrated seawater, which contains the salt and impurities caught by filters that allow only water molecules to pass, is roughly 8% salt—more than twice the 3.5% salt content of regular seawater. Because discharging concentrated seawater directly into the sea could damage marine ecosystems, Mamizupia initially disposed of it by mixing it with the discharge from a nearby sewage processing plant. Before Mamizupia went into operation, however, researchers were already exploring possibilities for using concentrated seawater instead of simply discarding it. Given global trends toward energy conservation and decarbonization, osmotic power generation was pursued as the best option.

One key player in the osmotic generation project was Kyowakiden Industry Co., Ltd., a water processing plant construction firm that was involved in building Mamizupia. Dr. UEYAMA Tetsuro of Kyowakiden explains the phenomenon of osmosis utilized in osmotic power generation. When two bodies of water with different salt content—like saltwater and freshwater—are separated by a semi-permeable barrier known as an osmotic membrane, water from the side with lower salt content crosses the membrane to the other side, seeking an equilibrium in salt concentration. Osmotic power generation harnesses the kinetic energy of this flow to turn turbines and generate electricity.

Osmotic power generation at Mamizupia has two main strengths. First, it puts two previously unused wastewater streams, one from the nearby sewage treatment plant, to work generating power. Second, it can generate power 24 hours a day, virtually unaffected by the weather, with extremely high utilization rates of around 90%. Mamizupia is expected to generate around 880,000 kWh per year, which is enough to power 300 average households.

Given the virtues of the technology, Ueyama is optimistic about its broader possibilities. "A system like this could be deployed in any densely populated region with the necessary infrastructure nearby—a desalination plant, like Mamizupia, and a sewage treatment facility—which gives it high potential for global expansion. Our initial target is the Middle East.

Not only does the region have more desalination facilities than anywhere else in the world, but many of those facilities are very large. For example, the United Arab Emirates is home to one of the world's largest desalination plants, which produces around 909,000 cubic meters of water daily. The utilization rate of osmotic power generation rises in proportion to the facility's size. So compared to Mamizupia, which generates around 110 kW from 20,000 cubic meters of water per day, we can expect vast amounts of electricity to be produced."

Hirokawa chimes in again on the ultimate objectives of the project. "Eventually, we hope to achieve osmotic power generation using ordinary, non-concentrated seawater. Since seawater makes up some 97.5% of all water on the planet's surface, this would be a major contribution to building a sustainable world."

To achieve this breakthrough, Hirokawa adds, the most urgent necessity is more efficient osmotic membranes. Japan is among the world's leaders in water treatment technology, with a roughly 60% share of the global market for desalination membranes. The day when a next-generation membrane enables osmotic power generation with regular seawater may not be far away. As a key facility for verifying advances in that field, Mamizupia is sure to attract notice from around the world.

1. **Why was the Uminonakamichi Nata Seawater Desalination Center (Mamizupia) established, and how does it address Fukuoka's water challenges?**
2. **What environmental problem did concentrated seawater pose, and how did it influence the adoption of osmotic power generation?**
3. **Explain the principle of osmosis and how it is used to generate electricity at Mamizupia.**
4. **What are the major advantages of osmotic power generation at Mamizupia compared to other renewable energy sources?**
5. **What is the future potential of osmotic power generation, and what technological advancement is necessary to expand its use globally?**

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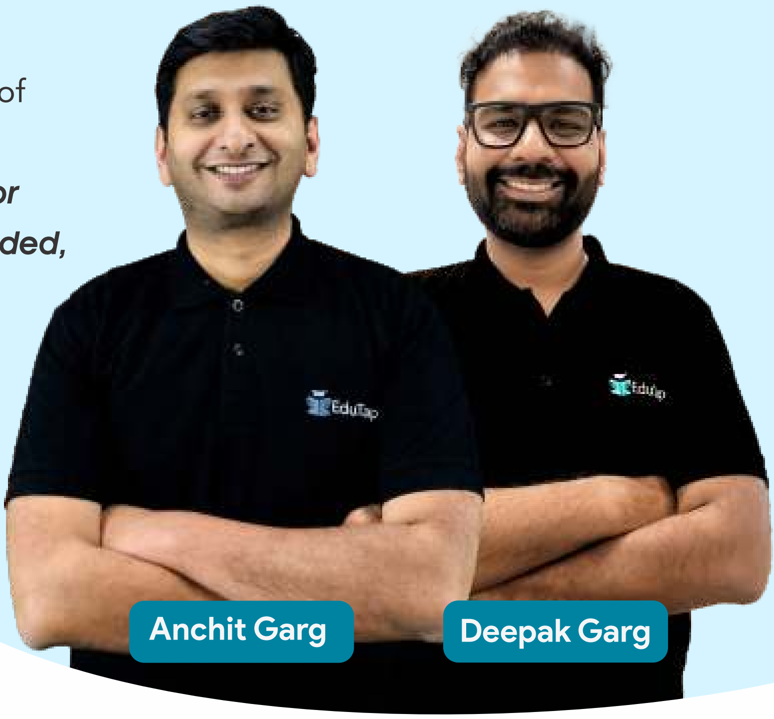

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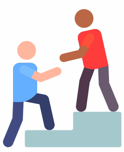

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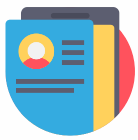

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