

CURRENT AFFAIRS



MCQ PRACTICE

ENVIRONMENT & GEOGRAPHY



Week 98

THE TUTORS ACADEMY

QUESTION 1

What are the consequences of the increase in temperatures in the Arctic more than the global average?

1. Rise in the sea levels
2. Warming of planet
3. Lower albedo effect
4. Disruption of weather patterns

Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 1, 3 and 4 only
- (c) 2 and 4 only
- (d) 1, 2, 3 and 4

QUESTION 2

With reference to the faecal coliform, consider the following statements:

1. Faecal coliform bacteria are a kind of coliform associated with human or animal wastes.
2. Escherichia coli (E. coli) is not a part of the group of faecal coliforms.
3. These bacteria directly pose a danger to people or animals.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 3 only
- (c) 2 only
- (d) 2 and 3 only

QUESTION 3

With reference to the glacier retreat in Arunachal Pradesh, consider the following statements:

1. There is a sharp decline in glacier coverage, with the number of glaciers decreasing around 15 per cent from 1988 to 2020.
2. Large glaciers are retreating at a faster pace as compared to smaller glaciers.
3. The shrinking of glaciers may lead to short-term flooding and unstable river flows.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

QUESTION 4

Consider the following materials:

1. Agricultural residues
2. Corn grains
3. Wastewater treatment sludge
4. Wood mill waste

Which of the above can be used as feedstock for producing Sustainable Aviation Fuel? (UPSC 2024)

- (a) 1 and 2 only
- (b) 2 and 4 only
- (c) 1, 2, 3 and 4
- (d) 1, 3 and 4 only

QUESTION 5

More than 7,500 lakes in this country have turned brown, begun emitting carbon, and suffered a drop in water quality due to extreme weather events that took place in 2022. These lakes, which were once crystal blue, provide drinking water to locals, feature rich biodiversity, and sequester atmospheric carbon. The study revealed that the lakes underwent the transformation at a breakneck speed. Typically, such changes take place over centuries, but in this case, they happened within months after the extreme weather events occurred.

The above mentioned lines refer to the lakes of which country?

- (a) United States
- (b) Russia
- (c) Canada
- (d) Denmark

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Week 98

Answers and Explanations

QUESTION 1

What are the consequences of the increase in temperatures in the Arctic more than the global average?

1. Rise in the sea levels
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Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 1, 3 and 4 only
- (c) 2 and 4 only
- (d) 1, 2, 3 and 4

1.Explanation

- ✓ At the north pole, temperatures rose by more than 20 degrees Celsius above usual, causing ice to melt. In the north of Svalbard, Norway, temperatures rose to 18 degrees Celsius over the 1991-2020 average.
- ✓ Since 1979, the Arctic has warmed four times faster than the world average. This is a problem since the region serves as a refrigerator for the rest of the world, cooling the planet. If temperatures continue to rise at this rate, it could have serious global consequences such as increasing sea levels and disruption of weather patterns.
- ✓ The region's present relatively mild temperatures throughout the depths of the polar winter (November to February) are the result of a deep low-pressure system over Iceland. The system allowed warmer air from lower latitudes to enter the region, bringing heat with it. Another component was extremely high sea surface temperatures in the northeast Atlantic, which exacerbated the wind-driven warming.



- ✓ There are several reasons contributing to the Arctic's rapid warming. One of the most noticeable factors is the albedo effect, or how much sunlight a surface reflects. Sea ice keeps temperatures low in the polar areas because its brilliant, white surface reflects more sunlight
- ✓ back into space than liquid water. As the Arctic ice cover melts, more land or water is exposed to the sun and absorbs more heat, causing temperatures to rise.
- ✓ Another reason is the lack of convection at higher latitudes, such as the Arctic. Convection happens when the warm surface of the Earth heats the air near the ground. In the tropics, where more sunlight reaches the surface than in the Arctic, considerable convection occurs, causing warm air to rise. This vertical mixing disperses heat throughout the atmosphere.
- ✓ Therefore, option (d) is the correct answer.

QUESTION 2

With reference to the faecal coliform, consider the following statements:

1. Faecal coliform bacteria are a kind of coliform associated with human or animal wastes.
2. Escherichia coli (E. coli) is not a part of the group of faecal coliforms.
3. These bacteria directly pose a danger to people or animals.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 3 only
- (c) 2 only
- (d) 2 and 3 only

2.Explanation

- ✓ The National Green Tribunal Wednesday rapped the Uttar Pradesh Pollution Control Board (UPPCB) and the Uttar Pradesh government for not submitting adequate details on faecal coliform and other water quality parameters, such as oxygen levels, in the river Ganga in Prayagraj.
- ✓ What is faecal coliform?
- ✓ Coliforms are bacteria found in the intestines of warm-blooded animals (including humans, pets, agricultural animals, and wildlife).
- ✓ Faecal coliform bacteria are a type of coliform found in human or animal excrement. Hence, statement 1 is correct.
- ✓ Faecal coliforms include Escherichia coli (E. coli). Hence, statement 2 is not correct.
- ✓ Coliforms are normally harmless to humans and animals, but they suggest the presence of other disease-causing bacteria, such as those responsible for typhoid, dysentery, hepatitis A, and cholera. Hence, statement 3 is not correct.

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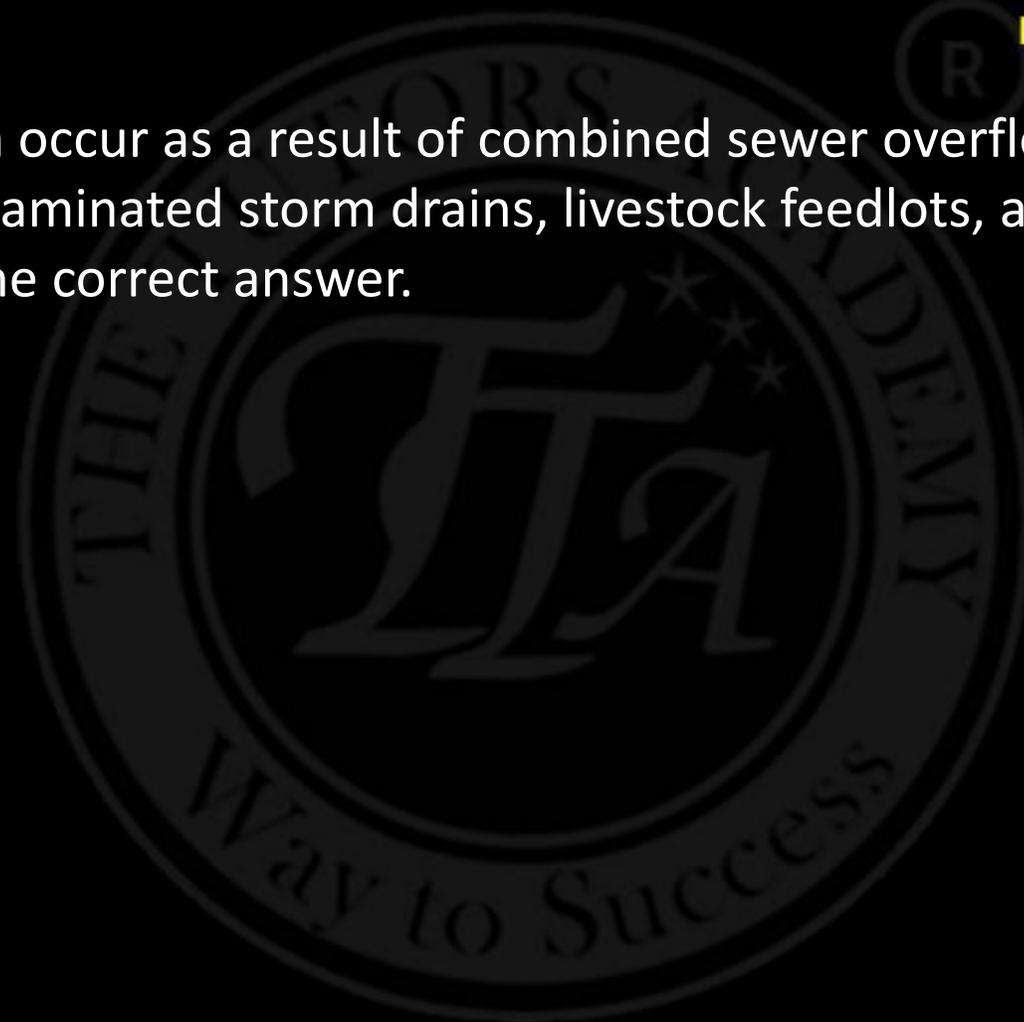
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- ✓ Faecal contamination can occur as a result of combined sewer overflows, leaking septic tanks, sewer malfunctions, contaminated storm drains, livestock feedlots, and other causes.
- ✓ Therefore, option (a) is the correct answer.



QUESTION 3

With reference to the glacier retreat in Arunachal Pradesh, consider the following statements:

1. There is a sharp decline in glacier coverage, with the number of glaciers decreasing around 15 per cent from 1988 to 2020.
2. Large glaciers are retreating at a faster pace as compared to smaller glaciers.
3. The shrinking of glaciers may lead to short-term flooding and unstable river flows.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

3.Explanation

- ✓ Researchers from Nagaland University and Cotton University, Guwahati, have documented significant glacier loss in Arunachal Pradesh during the last 30 years.
- ✓ The study used Remote Sensing (RS) and Geographic Information Systems (GIS) to examine glacier changes between 1988 and 2020.
- ✓ The data show a significant loss in glacier coverage, with the number of glaciers falling from 756 in 1988 to 646 by 2020. Hence, statement 1 is correct.
- ✓ The entire glacier area decreased by almost 300 square kilometres, with smaller glaciers retreating at a faster rate. Hence, statement 2 is not correct.
- ✓ The implications of glacial retreat go well beyond the region. Communities that rely on glacier meltwater for agriculture and drinking water may experience severe water shortages in the future. Melting glaciers may cause flooding and unstable river flows at first, but as glacial mass declines, so does water availability. Furthermore, increasing glacial lakes pose a risk since abrupt floods from glacial lake outbursts (GLOFs) can be extremely devastating.

- ✓ — This retreat creates long-term concerns regarding the availability of freshwater for the Himalayan region's 1.3 billion people. Glaciers that are melting may potentially cause short-term flooding and unstable river flows. Despite these issues, research into the Eastern Himalayas remains restricted. Hence, statement 3 is correct.
- ✓ Therefore, option (b) is the correct answer.

QUESTION 4

Consider the following materials:

1. Agricultural residues
2. Corn grains
3. Wastewater treatment sludge
4. Wood mill waste

Which of the above can be used as feedstock for producing Sustainable Aviation Fuel? (UPSC 2024)

- (a) 1 and 2 only
- (b) 2 and 4 only
- (c) 1, 2, 3 and 4
- (d) 1, 3 and 4 only

4.Explanation

- ✓ The National Biofuel Coordination Committee (NBCC) has set the initial indicative targets for blending of sustainable aviation fuel (SAF) with aviation turbine fuel (ATF), potentially setting the ball rolling for introduction of compulsory blending mandates in the future.
- ✓ The decision is consistent with the required phase of the International Civil Aviation Organization's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which will take effect in 2027.
- ✓ CORSIA, which applies to international flights, would mandate airlines worldwide to offset any increase in CO2 emissions above 2020 levels.
- ✓ SAF is derived from renewable resources such as agricultural waste, municipal solid waste, and forestry leftovers. This means that SAF has the potential to cut greenhouse gas emissions by up to 80% when compared to traditional jet fuel.”
- ✓ Therefore, option (c) is the correct answer.

QUESTION 5

More than 7,500 lakes in this country have turned brown, begun emitting carbon, and suffered a drop in water quality due to extreme weather events that took place in 2022. These lakes, which were once crystal blue, provide drinking water to locals, feature rich biodiversity, and sequester atmospheric carbon. The study revealed that the lakes underwent the transformation at a breakneck speed. Typically, such changes take place over centuries, but in this case, they happened within months after the extreme weather events occurred.

The above mentioned lines refer to the lakes of which country?

- (a) United States
- (b) Russia
- (c) Canada
- (d) Denmark

5.Explanation

- ✓ According to a new study, more than 7,500 lakes in western Greenland have gone brown, begun to leak carbon, and experienced a reduction in water quality as a result of extreme weather events in 2022.
- ✓ These once-clear blue lakes now offer drinking water to communities, support a diverse ecosystem, and trap carbon from the atmosphere.
- ✓ The study, 'Abrupt alteration of west Greenland lakes following compound climate extremes linked with atmospheric rivers', was published in Proceedings of the National Academy of Sciences. The study also revealed that the lakes went through the transition at breakneck speed. Such changes often take centuries, but in this case, they occurred within months after the intense weather events.

- ✓ Snowfall often occurs in Greenland during the autumn season, which lasts from late August until late September. However, higher temperatures in 2022 caused the snow to melt and turn into rain. The heat also caused permafrost, which is frozen earth that holds a lot of organic
- ✓ carbon, to thaw, releasing carbon, iron, magnesium, and other components. As the region saw record-breaking rainfall, these components were carried into the lakes, causing them to change.
- ✓ Greenland is an autonomous territory within the Kingdom of Denmark.
- ✓ Therefore, option (d) is the correct answer.