Bajrang Setu - India's First Cable Suspension Glass Bridge

1. Overview

• Name: Bajrang Setu

• Location: Rishikesh, Uttarakhand

• Type: Cable suspension bridge with glass flooring

• Length: 132 metres

• Height above Ganga River: Approx. 57-70 feet

• Cost: ₹68-70 crore (approx.)

Construction started: 2022

• Expected inauguration: Late 2025

• Full operational capacity: Early 2026

Significance:

- India's first cable suspension glass bridge
- Second such bridge in Asia

2. Design and Architectural Features

- Architectural theme:
 - A fusion of modern engineering and spiritual symbolism.
- Twin Towers Design:
 - Inspired by the sanctum (garbhagriha) of Kedarnath Temple.
 - One tower bears a figure of Lord Kedarnath, the other Lord
 Badrinath symbolizing the twin spiritual heritage of Uttarakhand.
- Materials Used:
 - High-strength steel cables and reinforced glass panels.
 - Transparent glass flooring of 65-66 mm thickness for pedestrians.

• Structure:

- Central deck designed to support two-wheelers and light fourwheelers.
- Side walkways for pedestrians with glass panels offering views of the Ganga below.

Aesthetic and safety features:

- Anti-slip coatings and multi-layered tempered glass for safety.
- Night illumination to enhance the visual appeal and ensure security.

3. Engineering and Innovation

Structural Design:

- Combines cable suspension technology with glass walkway architecture.
- Designed to withstand high wind pressure and seismic activity common in Himalayan regions.

• Technological Integration:

- Use of computer-aided modeling and wind tunnel testing for stability.
- Built using environmentally sustainable construction practices to minimize river pollution.

4. Cultural and Spiritual Significance

- Represents the spiritual essence of Uttarakhand, known as "Devbhoomi" (Land of Gods).
- Symbolizes the **connection between tradition and modernity** blending ancient temple design with advanced engineering.
- Enhances religious tourism linked to Char Dham pilgrimage and nearby ashrams.
- Strengthens Rishikesh's image as a place where **spirituality meets** innovation.

5. Location Advantage and Connectivity

- Situated near key attractions:
 - Parmarth Niketan Ashram
 - Beatles Ashram
 - Lakshman Jhula (now closed) and Ram Jhula
- Provides a modern alternative to older bridges, improving local connectivity across the Ganga.
- Aims to ease movement for pilgrims and tourists while boosting local trade and transport.

6. Tourism and Economic Impact

- Expected to attract thousands of domestic and foreign tourists annually.
- Promotes **eco-friendly and adventure tourism** (glass walk experience).
- Adds to Rishikesh's identity as the "Yoga Capital of the World".
- Boosts local economy through hospitality, retail, and tourism sectors.
- Reflects Uttarakhand government's focus on **sustainable infrastructure** and **heritage-based development**.

7. Administrative and Project Details

- Implementing authority: Government of Uttarakhand (Public Works Department & Tourism Department).
- Estimated cost: ₹68-70 crore.
- **Funding:** State government with possible tourism and infrastructure development grants.
- Project timeline:
 - Initiated 2022
 - Construction phase 2022-2025
 - Completion and opening End of 2025

8. Exam-Oriented Key Facts (For Quick Revision)

Parameter
Bridge Name
Location
Type
Length
Height above Ganga
Construction Began
Expected Completion
Cost
Special Features

Religious Depictions Tourism Impact National Significance **Details**

Bajrang Setu

Rishikesh, Uttarakhand

Cable suspension glass bridge

132 metres 57-70 feet

2022 Late 2025 ₹68-70 crore

Glass flooring, twin towers inspired by

Kedarnath Temple

Lord Kedarnath & Lord Badrinath

Boosts spiritual, adventure, and eco-tourism India's first and Asia's second such bridge

9. Possible UPSC Questions

Prelims (Objective Type)

1. Bajrang Setu, recently in news, is located in which state?

Answer: Uttarakhand

- 2. Which of the following statements about Bajrang Setu is correct?
 - (a) It is India's longest rail bridge
 - (b) It is India's first cable suspension glass bridge
 - o (c) It connects Rameswaram with the mainland
 - (d) It is part of the Char Dham road projectAnswer: (b)
- 3. The design of Bajrang Setu's twin towers is inspired by:

Answer: Kedarnath Temple

Mains (Descriptive Type)

Q. Discuss the significance of Bajrang Setu in promoting cultural heritage and sustainable tourism in Uttarakhand.

Approach:

- Introduction Background and location
- Design and symbolic representation
- Role in tourism and local economy

- Technological innovation and sustainability
- Conclusion Model for future heritage-based infrastructure

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