

U.G. 6th Semester Examination-2023

BOTANY

[HONOURS]

Discipline Specific Elective (DSE)

Course Code : BOT-H-DSE-T-03B

(Coastal Biology)

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.
Candidates are required to give their answers in
their own words as far as practicable.*

1. Answer any five from the following : $2 \times 5 = 10$
- Mention two distinct characters of an estuary.
 - Name two Hot spots of coastal biodiversity in India.
 - Enumerate two adaptive features of mangroves.
 - What is eutrophication?
 - Define Red Tide, Name the causal organism.
 - Name two edaphic factors that influence coastal zone agriculture.
 - Give the full form of ICZM.

[Turn Over]

Using Wilson's theorem, prove that for any odd prime p ,

$$1^2 \cdot 3^2 \cdot 5^2 \cdots (p-1)^2 \equiv (-1)^{\frac{p+1}{2}} \pmod{p}. \quad 6$$

Establish that for any positive integer n ,

$$\frac{\sigma(n)}{n} \geq 1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n}. \quad 5$$

Prove that for any positive integer r , the product of any r consecutive positive integers is divisible by $r!$ 5

h) Name two important coastal resources of West Bengal.

2. Answer any two from the following: $5 \times 2 = 10$

- Mention the names of 5 important mangrove regions in India. Give a comparative estimate of mangrove diversity in these regions.
- Give a descriptive account of coastal zone hazards.
- What are the steps involved in ecological restoration?
- Mention the priorities in coastal zone conservation.

3. Answer any two from the following: $10 \times 2 = 20$

- Give a detailed description of forest management with respect to mangroves.
- Write an explanatory note on role of microbes in food chain.
- Describe the importance of coastal zone biogeochemical cycles.
- Explain the impact of climate change on formation, development and succession of mangroves.