

LICENCIATURA EM GEOGRAFIA
Exame de Geomorfologia Litoral

ÉPOCA NORMAL

19 janeiro de 2024

O exame é de resolução **individual** e sem recurso a consulta.

1. identify the true and false statements. Correct the false and/or incomplete statements.

	Afirmação	V/F
1	There are no earthquakes at tectonic plate boundaries.	
2	The Azores are located on the American tectonic plate, on continental crust.	
3	In tectonic terms, the coastline of mainland Portugal is located on a passive margin.	
4	The Continental Shelf is made up of a gently sloping surface that includes the submerged territory from the coastline to the first elevations of the interior.	
5	During storms, swells often exceed 10 metres in height on the north coast of mainland Portugal.	
6	The Significant Wave Height (SWH) corresponds to the average of the third of the highest waves recorded during the time under consideration.	
7	The coastline of mainland Portugal has a micro-tidal regime in which the maximum annual tidal range does not exceed 2 metres.	
8	The tides along the coast of mainland Portugal spread from north to south.	
9	The amount of kinetic energy transferred from the wind to the waves depends on the speed, duration and direction of the wind.	
10	Wave refraction occurs when there is a change of direction in the orientation of the wave crest.	
11	A tidal bore is the resting period of the water before the reversal of currents occurs.	
12	Tides are the largest ocean waves and are the result of the joint gravitational attraction between ocean water and the Moon.	
13	Negative altitude is the vertical distance between the mean sea level and a point on the ocean floor.	
14	The hydrographic zero used on navigation charts corresponds to the lowest value reached by the highest annual high tide in relation to the mean sea level.	
15	The formation of underwater sandbars is a natural defence of beaches against erosion caused by storms.	
16	When a spur is built on the west coast of mainland Portugal, erosion is often observed to the north and sand accretion to the south.	
17	Beaches are formed by sediments of fluvial origin.	
18	Um estuário corresponde a uma área oceânica onde ocorre a mistura entre a água salina proveniente do mar e água doce proveniente de um rio. An estuary is an oceanic area where saline water from the sea and fresh water from a river mix.	
19	A Coastal drift on the south coast of Portugal runs from south to north.	
20	Beaches are one of the typical morphologies of rocky coastlines.	

2. The sea is rarely at rest. Even if there is no surface agitation, the tide involves movements in the water column.

- 2.1 Label the wave parameters shown in figure 1 by the numbers 1 to 4.
- 2.2 With regard to waves, distinguish between maximum height and significant height.
- 2.3 Why doesn't the process of waves breaking occur in the open ocean?
- 2.4 How are waves generated in the oceans?

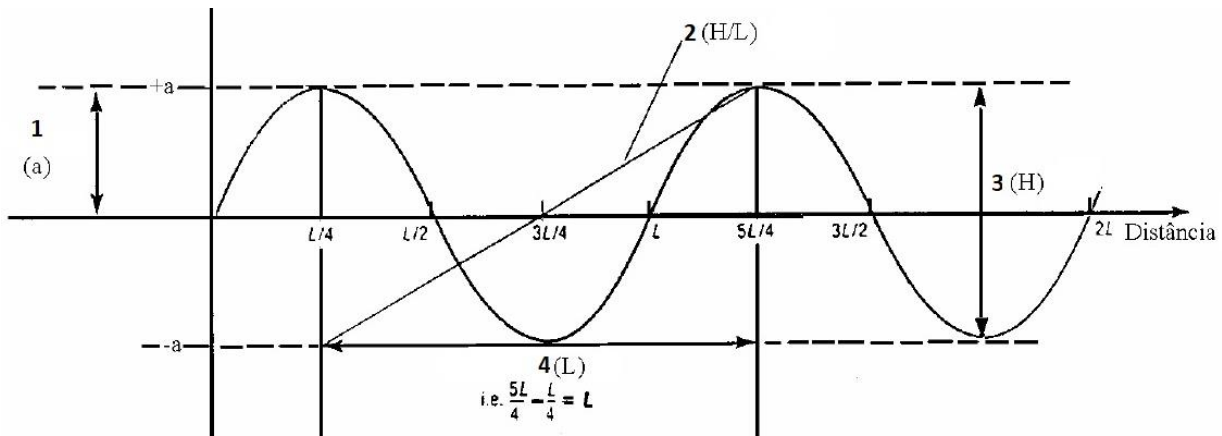


Figure 1 - The parameters of the wave.

- 2.5 Label the tidal elements shown in figure 2 by the numbers 1 to 7.
- 2.6 Identify the tidal regime of tide gauges A and B shown in figure 2. Justify your answer.
- 2.7 Briefly describe the tidal formation process.

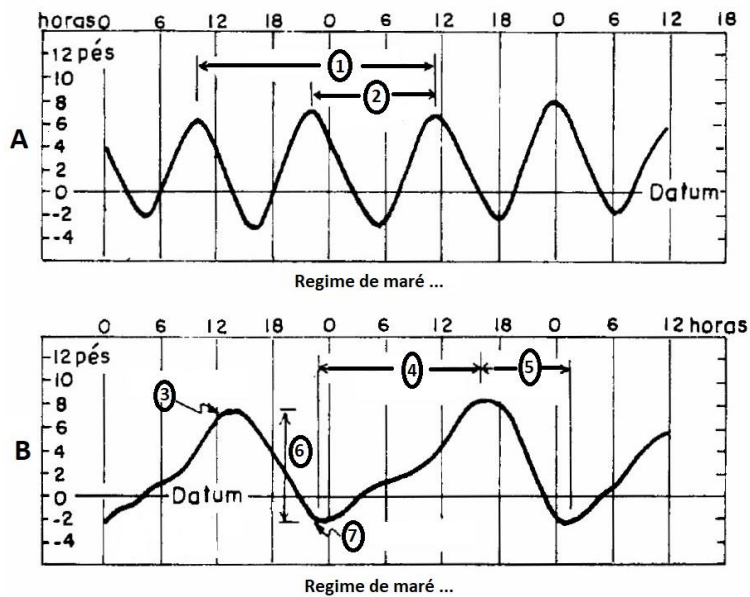


Figure 2 - The elements of the tide.

3. Briefly explain the process of giant wave formation in Nazaré.

4. Identify the erosive processes that occur on the coast and list the main forms that characterise rocky and sandy coasts.

Good luck.