Name: Score:

20 Multiple choice questions

Term 1 of 20

What is the impact of sea urchins on kelp forests?

- Sea urchins can stabilize kelp forests, preventing overgrowth.
- Sea urchins can decrease kelp biomass, leading to reduced habitat complexity.
- Sea urchins can promote kelp reproduction, expanding habitat size.
- Sea urchins can increase kelp growth, leading to enhanced biodiversity.

Term 2 of 20

What are the implications of the findings by Krayesky et al. 2016 regarding microorganisms in rhodoliths?

- They found no microorganisms in rhodoliths, suggesting sterile environments.
- They discovered that rhodoliths are uninhabited by any living organisms.
- They discovered many microorganisms living inside rhodoliths, indicating complex microhabitats.
- They identified only algae living on rhodolith surfaces, indicating simple ecosystems.

Term 3 of 20

What is the significance of kelp in relation to understory algae?

- Kelp promotes the growth of invasive algae, disrupting marine ecosystems.
- Kelp inhibits understory algae growth, reducing sessile invertebrate diversity.
- Kelp competes with coral for sunlight, decreasing reef biodiversity.
- Kelp can outcompete understory algae for light, facilitating sessile invertebrate diversity.

Term 4 of 20

What is the depth range for Nereocystis luetkeana?

- Nereocystis luetkeana is found at depths of 5 m in sheltered bays.
- Nereocystis luetkeana is found at depths of 30 m in open oceans.
- Nereocystis luetkeana is found at depths of 10 m in coastal estuaries.
- Nereocystis luetkeana is found at depths of 17 m in exposed areas.

Term 5 of 20

What is the role of giant kelp in its habitat?

- Giant kelp provides shelter for terrestrial animals, reduces wave energy, and increases turbidity.
- Giant kelp supports coral growth, alters ocean currents, and increases salinity.
- Giant kelp can shade out the bottom, change water chemistry, and buffer wave action.
- Giant kelp increases water temperature, reduces oxygen levels, and enhances sediment erosion.

Term 6 of 20

What are the challenges seaweed faces in terms of competition?

- Seaweed competes for space, nutrients, and light against other marine organisms.
- Seaweed competes for nutrients, shelter, and carbon dioxide with marine mammals.
- Seaweed competes for space, salinity, and temperature with coral reefs.
- Seaweed competes for sunlight, water depth, and oxygen with terrestrial plants.

LIVEWORKSHEETS

Term 7 of 20

What is the density of crustaceans found per kg of kelp fronds?

- ○ 10000 crustaceans per kg of kelp fronds.
- ○ 3000 crustaceans per kg of kelp fronds.
- ○ 5000 crustaceans per kg of kelp fronds.
- ○ 8000 crustaceans per kg of kelp fronds.

Term 8 of 20

What is the primary role of kelp forests in the carbon cycle?

- ○ Kelp forests store CO_2 in the atmosphere, increasing global carbon levels.
- ○ Kelp forests release CO_2 through respiration, increasing carbon levels in water.
- ○ Kelp forests absorb Oxygen through photosynthesis, reducing oxygen levels in water.
- ○ Kelp forests absorb CO_2 through photosynthesis, reducing carbon levels in water.

Term 9 of 20

What environmental factors determine the distribution of seaweed in the intertidal?

- ○ Factors include temperature stability, nutrient concentration, and predator abundance.
- ○ Factors include salinity levels, ocean depth, and disease prevalence.
- ○ Factors include wave energy, sediment type, and human activity impacts.
- ○ Factors include light availability, water chemistry, and competition with other species.

Term 10 of 20

What is the significance of dissolved organic carbon (DOC) in marine ecosystems?

- ○ DOC acts as a carbon sink and is involved in nutrient cycling and photosynthesis.
- ○ DOC acts as a pollutant and reduces water quality.
- ○ DOC is involved in atmospheric carbon exchange and erosion.
- ○ DOC supports terrestrial plant growth and soil enrichment.

Term 11 of 20

What is Kelp Rafting?

- ○ Kelp Rafting describes the harvesting of kelp for biofuel production.
- ○ Kelp Rafting involves the transportation of kelp for coastal erosion control.
- ○ Kelp Rafting refers to the cultivation of kelp for commercial purposes.
- ○ Kelp Rafting refers to kelp that can travel long distances, providing habitat and resources for various marine organisms.

Term 12 of 20

How does ocean acidity affect calcifying organisms?

- ○ Increased acidity makes it harder for organisms to build calcium carbonate structures, leading to potential dissolution.
- ○ Increased acidity enhances calcium carbonate formation, promoting coral growth.
- ○ Increased acidity has no effect on calcium carbonate structures in marine organisms.
- ○ Increased acidity stabilizes calcium carbonate structures, preventing dissolution.

Term 13 of 20

What are the effects of kelp detritus on water flow?

- ○ Kelp detritus increases water flow, reduces nutrient levels, and stabilizes sediments.
- ○ Kelp detritus reduces water flow, increases deposition, and alters nutrient and chemical levels.
- ○ Kelp detritus accelerates water flow, increases salinity, and reduces chemical levels.
- ○ Kelp detritus enhances water clarity, promotes erosion, and alters temperature.

LIVEWORKSHEETS

Term 14 of 20

What are biotic factors that influence seaweed growth?

- ○ **Diversity, competition, parasites, epiphytes, and reproductive cycles.**
- ○ **Habitat size, oxygen concentration, and geological features.**
- ○ **Climate patterns, water depth, and chemical composition.**
- ○ **Temperature, salinity, nutrient levels, and water clarity.**

Term 15 of 20

What is the effect of seasonal changes on seaweed exposure?

- ○ **Seasonal changes impact predator activity, sediment deposition, and water clarity.**
- ○ **Seasonal changes affect sun exposure, high tide levels, and UV light, impacting growth.**
- ○ **Seasonal changes influence salinity, water depth, and ocean current patterns.**
- ○ **Seasonal changes affect nutrient availability, water temperature, and oxygen levels.**

Term 16 of 20

What is a significant resource that giant kelp could provide?

- ○ **Giant kelp could be a significant resource for many unaccounted species that are small or live in cryptic habitats.**
- ○ **Giant kelp could be a significant resource for terrestrial mammals.**
- ○ **Giant kelp could be a significant resource for large migratory fish.**
- ○ **Giant kelp could provide energy for deep-sea hydrothermal vents.**

Term 17 of 20

How do sea urchins affect the diversity of benthic invertebrates?

- ○ **Sea urchins enhance the diversity of benthic invertebrates and seaweed.**
- ○ **Sea urchins reduce the diversity of benthic invertebrates and seaweed.**
- ○ **Sea urchins promote the growth of coral reefs.**
- ○ **Sea urchins stabilize the populations of marine predators.**

Term 18 of 20

What are three connections that seaweed has in its ecosystem?

- ○ **Carbon sequestration, shelter construction, and water purification.**
- ○ **Nutrient absorption, predator avoidance, and energy storage.**
- ○ **Primary production, habitat, and foundation species.**
- ○ **Oxygen production, soil stabilization, and food source for terrestrial animals.**

Term 19 of 20

What is the predicted ocean pH by 2100?

- ○ **The predicted ocean pH by 2100 is 8.5, which is less acidic than current levels.**
- ○ **The predicted ocean pH by 2100 is 7.8, which is 150 times more acidic than preindustrial levels.**
- ○ **The predicted ocean pH by 2100 is 7.0, which is more alkaline than preindustrial levels.**
- ○ **The predicted ocean pH by 2100 is 8.0, maintaining current acidity levels.**

Term 20 of 20

What is the saturation state of seawater (Ω) and its significance?

- ○ **Ω indicates the salinity of seawater; values greater than one inhibit shell formation.**
- ○ **Ω indicates the temperature of seawater; values greater than one promote coral bleaching.**
- ○ **Ω indicates the saturation state of seawater for calcium carbonate; values greater than one promote shell formation.**
- ○ **Ω indicates the pH level of seawater; values greater than one promote ocean acidification.**

LIVEWORKSHEETS