

**Weekly Homework**  
**8th Week**

الإدارة المركزية للتعليم العام  
إدارة تنمية مادة العلوم



2026

# Integrated Sciences

**1st Secondary**  
**First Term**

**إشراف**

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مستشار مادة العلوم

**إشراف عام**

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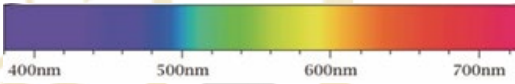
خالد عبدالحليم

محمد عنتر



Ch (1): Lesson (8) The Effect of Light and Solar Radiation on Aquatic

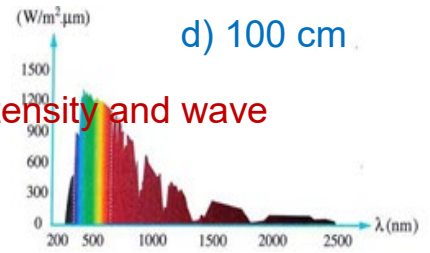
**Question (1) Choose the correct answer:-**

- 1) As water depth increases, the intensity of light under the water surface...  
a) gradually increases                      b) gradually decreases  
c) decreases then increases                d) increases then decreases
- 2) Which of the following electromagnetic spectrum waves have the greatest energy  
a) Radio wave                      b) X-rays                      c) Visible spectrum                      d) Gamma rays
- 3) A small part of electromagnetic spectrum which differ from each other in frequencies and wave lengths refers to .....  
a) Invisible spectrum                      b) Visible spectrum                      c) X-rays                      d) Gamma rays
- 4) In the opposite figure, the ratio between frequency of red and that of violet spectrum equals to .....  
a)  $\frac{1}{1}$                       b)  $\frac{4}{7}$                       c)  $\frac{7}{4}$                       d)  $\frac{1}{2}$
- 
- 5) The visible light composed of different spectrum colors, which of the following has the maximum wave length?  
a) yellow color                      b) orange color                      c) green color                      d) blue color
- 6) The amount of light that penetrates the water surface is the greatest when the angle between the incident sun's rays and the water surface equals...  
a)  $0^\circ$                       b)  $45^\circ$                       c)  $90^\circ$                       d)  $120^\circ$
- 7) At a depth of 10 cm below the water surface, most of the energy of sunlight is absorbed in the form of...  
a) Visible light                      b) Infrared rays                      c) Ultraviolet rays                      d) Blue light

8) In clear water Algae and Aquatic plants grow well at depth.....

- a) 1 m                                      b) 10 m                                      c) 100 m                                      d) 100 cm

9) The opposite graph represents the relation between light intensity and wave length, so the ratio between the intensities of the wavelengths 500 nm and 1500 nm of solar radiation, respectively,



at sea level is

- a) Equals to 1                              b) Less than one                              c) Greater than one                              d) No relation

10) The figure at the front of you shows the solar radiation that fall inclined on water surface, so the amount of energy that penetrates the water surface ..... by decreasing inclination angle with a water surface



- a) increases                              b) decreases                              c) unchanged                              d) reduced

11) Which of the following statements represents the correct order of the light zones in water according to their depth from top to bottom?

- a) Twilight zone – Dark zone – Sunlit zone  
 b) Dark zone – Sunlit zone – Twilight zone  
 c) Sunlit zone – Twilight zone – Dark zone  
 d) Twilight zone – Sunlit zone – Dark zone

12) At 10 m depth from the surface of water more than ..... % of visible light is absorbed

- a) 1    b) 10    c) 50    d) 90

13)The solar radiation stimulates the growth of ..... that live inside coral tissue

- a) Symbiotic bacteria    b) Symbiotic algae  
 c) Symbiotic fungi    d) Tropical fish



14) Which of the following colors penetrates the deepest clear tropical water?

- a) Red – 1%                      b) Blue – 1%                      c) Red – 50%                      d) Blue – 50%

15) The ocean's water ..... warm color of visible spectrum as red and orange

- a) Reflects                      b) Absorbs                      c) Scatters                      d) Disperses

16) The different spectrum colors penetrate the ocean's waters, the water absorbs....

- a) warm colors only                      b) cooler colors only  
c) all colors of spectrum                      d) short wave length colors

17) Solar radiation is a vital factor in retaining the ecological balance in aquatic environment, where it affects

- a) Photosynthesis process  
b) aquatic environmental temperature  
c) the distribution of marine organisms  
d) all the previous

18) Autotrophic organisms such as ..... are abundant in the surface layer of water

- a) Plants                      b) Algae                      c) Phytoplankton                      d) All the previous

19) The Gulf stream carries the warm water from equator toward the north Atlantic Ocean which leads to.....

- a) Elevation of temperature                      b) Death of marine life  
c) Diversity of marine life                      d) Global warming

20) From tropical fish that live in warm water and require a specific temperature are .. .. .

- a) Tuna and barracuda                      b) only tuna  
c) Only barracuda                      d) Code

## Essay Questions

### 1) Give reasons:

a) Photosynthesis mainly occurs in the surface layers of water bodies.

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b) Solar radiation is a vital factor in maintaining the ecological balance in aquatic environments.

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c) Algae and phytoplankton are abundant in the surface layers of water bodies.

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2) The opposite figure illustrates the relation between coral tissue and symbiotic algae. Explain?

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3) The light intensity gradually decreases by increasing water depth, the gradient of light defines different zones in oceans.

Arrange these zones from the lightest zone to the darkest zone?

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# Integrated Sciences

2025-2026

1st Secondary  
First Term

Weekly Assessment  
8th Week



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مستشار مادة العلوم

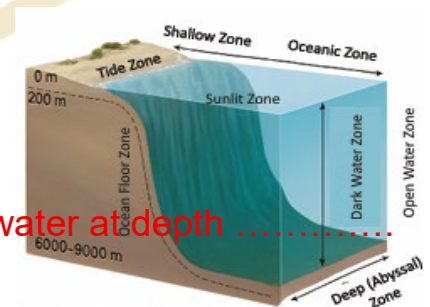
إشراف عام  
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مكتب مستشار  
مادة العلوم  
عبدالله مصطفى  
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محمد عبداللطيف

إعداد ومراجعة  
عمرو مالي  
خالد عبدالحليم  
مجدي فتحي  
محمد عنتر

**Choose the correct answer:-**

- 1) The electromagnetic spectrum which propagates in the form of electromagnetic waves represents .....
  - A. Invisible spectrum
  - B. Visible spectrum
  - C. Radio wave
  - D. Gamma rays
  
- 2) If you know that, the wave length of visible spectrum ranges between 400nm: 700nm, therefore the ratio between wave length of red and violet spectrum equals
  - A.  $\frac{1}{1}$
  - B.  $\frac{4}{7}$
  - C.  $\frac{7}{4}$
  - D.  $\frac{1}{2}$
  
- 3) As water depth increases, the intensity of light under the water surface...
  - A. gradually increases
  - B. gradually decreases
  - C. decreases then increases
  - D. increases then decreases
  
- 4) The amount of solar energy that penetrates the water surface depends on ..... at which the sun rays strike it
  - A. Intensity
  - B. Angle
  - C. Velocity
  - D. Wave length
  
- 5) The amount of light that penetrates the water surface increases when the angle between the incident sun's rays and the water surface .....  $90^\circ$ 
  - A. Equals to
  - B. More than
  - C. Less than
  - D. Both A and B
  
- 6) From the opposite figure, the ascending order of light zones in water according to light intensity
  - A. Twilight zone – Dark zone – Sunlit zone
  - B. Dark zone – Twilight zone – Sunlit zone
  - C. Sunlit zone – Twilight zone – Dark zone
  - D. Twilight zone – Sunlit zone – Dark zone
  
- 7) All infrared energy from sunlight is almost absorbed by water at depth .....
  - A. 100 m
  - B. 100 cm
  - C. 10 m
  - D. 10 cm



- 8) At depth 10 m water absorbs greater than ..... of visible spectrum energy  
 A. 95 %                                      B. 50 %                                      C. 10 %                                      D. 1 %
- 9) Which of the following light colors is Scattered after penetrating the surface of a water body?  
 A. Warm colors                                      B. Cooler colors                                      C. No color                                      D. All colors
- 10) The opposite fig. illustrates importance of solar radiation as a vital factor in maintaining the ecological balance in aquatic environment because it affects .....  
 A. Photosynthesis process  
 B. Water temperature  
 C. Distribution of marine organisms  
 D. All the previous
- 
- 11) In clear water Aquatic plants and Algae grow well down to depth of ..... meters  
 A. 100                                      B. 50                                      C. 10                                      D. 1
- 12) Coral reefs thrive in ..... water near the equator  
 A. Depth cold                                      B. Shallow cold                                      C. Shallow warm                                      D. Depth warm
- 13) Cold-water fish which live far from the equator are.....  
 A. Tuna                                      B. Cod                                      C. Barracuda                                      D. Coral
- 14) Some marine animals require a specific temperature to survive and reproduce such as .....  
 A. Cod and tuna                                      B. Tuna and Coral  
 C. Tuna and Barracuda                                      D. Cod only
- 15) The Gulf Stream carries warm water from the equator toward the North Atlantic Ocean, which leads to .....  
 A. Moderate climate in Western Europe  
 B. Reduce marine biodiversity  
 C. Raise Temperature in these regions  
 D. Leakage of Food sources

## Essay Questions

1- From opposite figure which shows the gradual penetration of Solar radiation through water surface, Mention what is the role of solar radiation in maintaining the ecological balance in the oceans?



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٢- Give reason for:

a) Symbiotic algae live inside the coral tissue?

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b) Marine organisms are distributed unevenly in the water?

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c) In turbid water aquatic plants found closer to the surface?

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d) Tropical fishes such as tuna prefer to live in a tropical region?

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3- Explain the relationship between symbiotic algae and coral tissues?

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4- Explain the following statement:

The disruptions in ecological balance due to changing intensity of solar radiation within the seasonal change or climate change.

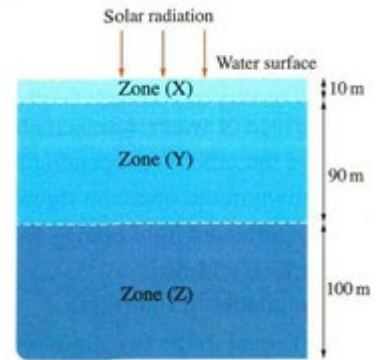
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5- What will happen if:

Gulf stream carries warm water from the equator to the north Atlantic Ocean?

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6-The opposite diagram shows solar radiation being incident normally on the surface of the ocean water,



What is the region at which

a) The region at which the infrared radiation absorbed totally when it passes through it.

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b) The region at which more than 50% of visible spectrum absorbed.

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c) The region at which the energy of the light reduced to become 1% at the end of this region.

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