

# نموذج الاختبار التكويني الأول الوحدة الأولى light of nature Wave منهج انسابير



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف العاشر المتقدم ← فيزياء ← الفصل الثاني ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 20-01-2026 18:12:38

ملفات اكتب للمعلم اكتب للطالب اختبارات الكترونية اختبارات احلول اعروض بوربوينت اوراق عمل  
منهج انجليزي املخصات وتقارير امذكرة وبنوك الامتحان النهائي للدرس

المزيد من مادة  
فيزياء:

إعداد: عبد الرحمن عصام

## التواصل الاجتماعي بحسب الصف العاشر المتقدم



الرياضيات



اللغة الانجليزية



اللغة العربية



ال التربية الاسلامية



المواد على تلغرام

صفحة المناهج  
الإماراتية على  
فيسبوك

## المزيد من الملفات بحسب الصف العاشر المتقدم والمادة فيزياء في الفصل الثاني

الطبيعة الموجية للضوء وتطبيقاتها في الحيود واللون

1

تحليل أساسيات الضوء الاستقطاب وتأثير دوبлер والطبيعة الموجية مع تطبيقات عملية

2

شرح شمولي للطبيعة الموجية للضوء وتطبيقاته الفيزيائية

3

ملزمة شاملة الفصل الثاني منهج انسابير

4

حل أسئلة الامتحان النهائي القسم الالكتروني والورقي منهج انسابير

5

# Test 1 / wave nature of light

Term-2

UNITED ARAB EMIRATES  
MINISTRY OF EDUCATION



الإمارات العربية المتحدة  
وزارة التربية والتعليم

Name.....

Date

Grade 10 A

1. Choose the correct answer of the following questions:

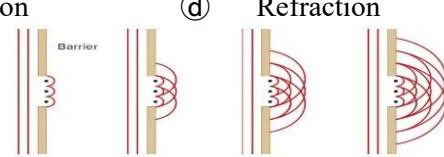
1) The bending of light as it passes the edge of a barrier is called:

(a) Reflection

(b) Diffraction

(c) Polarization

(d) Refraction



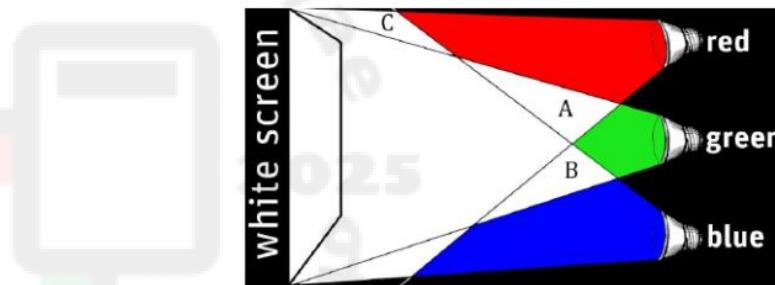
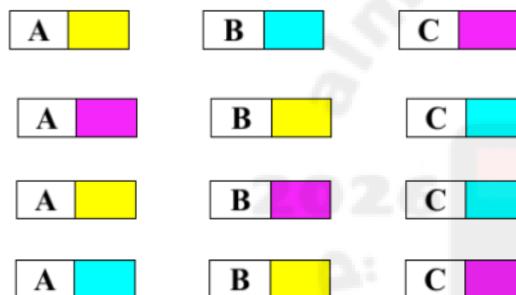
2) The figure shows waves before and after passing the barrier.

Which of the following is **true** for the waves after passing the barrier?

(a) The wavelength is decreased (b) The direction of its propagation is changed  
(c) The wavelength is increased (d) The frequency is decreased

3) The diagram represents overlapping areas of light of the same intensity.

Which of the following **indicates the colors** that appear in areas (A, B, C)?



4) White light (composed of its seven color components) falls on a green leaf.

Which of the following statements **describes what happens**?



(a) The eye sends a ray toward the leaf, which reflects it back, so it appears green.  
(b) The pigment molecules in the green leaf absorb the green light and reflect all the other colors.  
(c) The pigment molecules in the green leaf absorb all the colors and reflect only green light.  
(d) The pigment molecules absorb all the colors, so the leaf appears light-coloured.

5) Which of the following is **not** correct?

(a) The primary pigment is a pigment that absorbs only one primary color and reflects two from white light.  
(b) The secondary pigment is a pigment that absorbs two primary light colors and reflects one color.  
(c) The primary pigment colors are the secondary colors of light.  
(d) The primary pigment colors are red, green, and blue.

6) Red and blue light make \_\_\_\_\_.

(a) Magenta      (b) Violet      (c) Indigo      (d) Purple

7) Which of these colors of light has the **longest** wavelength?

(a) Red      (b) Green      (c) Black      (d) Violet

8) Which of these colors of light has **the higher frequency**?

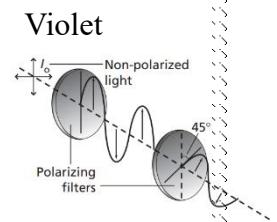
(a) Red      (b) Green      (c) Black      (d)

9) Unpolarized light of intensity  $I_0$  is incident on a polarizing filter,

and the emerging light strikes a second polarizing filter, as shown in the figure.

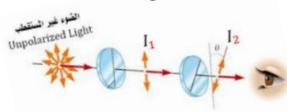
What is the light intensity emerging from the second polarizing filter?

(a)  $\frac{I_0}{2}$       (b)  $\frac{I_0}{4}$       (c)  $I_0$       (d)  $4I_0$



10) The figure shows a light ray passing through two polarizing filters. The intensity of observed light is **36.0%** of the intensity coming out of the first filter.

What is the angle between the polarizing axes of the two filters?



(a)  $75.54^\circ$       (b)  $36.87^\circ$       (c)  $53.13^\circ$       (d)  $45.54^\circ$

11) If you were to place the polarizing axes of two polarizing filters at  $90^\circ$  to each other,

What percent of light **intensity** would **pass** through?

(a) 0      (b) 50%      (c) 100%      (d) 75%

12) What is the **wavelength** of blue light that has a frequency of  $6.66 \times 10^{14} \text{ Hz}$

(a)  $2.22 \times 10^6 \text{ m}$       (b)  $4.5 \times 10^{-7} \text{ m}$       (c)  $4.5 \times 10^{-21} \text{ m}$       (d)  $2.22 \times 10^{21} \text{ m}$

13) A hydrogen atom in a galaxy moving away from Earth at a speed of  $7.55 \times 10^6 \text{ m/s}$  emits light with a frequency of  $6.16 \times 10^{14} \text{ Hz}$ . Given that the speed of light in vacuum is  $3.00 \times 10^8 \text{ m/s}$ ,

What **frequency** of light from that hydrogen atom would be **observed** by an astronomer on Earth?

(a)  $6.16 \times 10^{12} \text{ Hz}$       (b)  $6.314 \times 10^{14} \text{ Hz}$       (c)  $6.00 \times 10^{14} \text{ Hz}$       (d)  $6.314 \times 10^{10} \text{ Hz}$

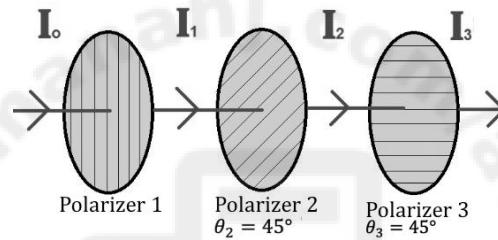
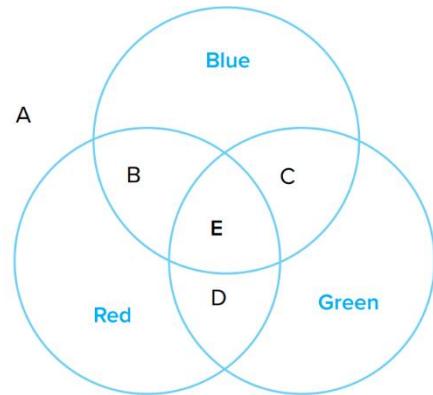
14) A star in a galaxy moving at a speed of  $9.28 \times 10^7 \text{ m/s}$  away from Earth emits light with a wavelength of 520 nm.

What would be **the observed wavelength** of the light from that star on Earth?

(a) 1076 nm      (b) 680 nm      (c) 360 nm      (d) 319 nm

The diagram below represents three overlapping circles of equally intense light of different pure colors. Assume that the circles are projected onto a white screen in an otherwise completely dark room. Refer to the diagram to answer questions 1—8.

1. Why would region A be black?
2. What color would region B be?
3. What color would region C be?
4. What color would region D be?
5. What color would region E be?
6. The color in region B is the complement to which color?
7. The color in region C is the complement to which color?
8. The color in region D is the complement to which color?



9.

What fraction of the intensity of the original light  $I_0$  gets through:

- a. The polarizer 2?
- b. The polarizer 3?
- c. Suppose the second polarizer is removed. What is the intensity of light transmitted by the two (i.e., first and third) polarizers now?

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Abdelrahman Essam explored how the motion of galaxies can be determined relative to Earth using the Doppler effect. This phenomenon is observed by measuring shifts in the wavelengths of spectral lines emitted from celestial bodies, using advanced telescopic instruments (see Figure 1).

In one experiment, the sodium emission line was found to have a wavelength of 513 nm in laboratory conditions. However, when observed in the spectrum of a distant galaxy, the same line appeared at a wavelength of 525 nm (see Figure 2).



(a) Is the observed galaxy moving **closer to Earth or farther away** from it? Justify your answer based on the wavelength shift.

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(b) Calculate the **speed of the observed galaxy** relative to Earth using the Doppler effect.

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