Question **1**

ot yet answered

Marked out of 2.00

The absolute index of refraction of the first medium is equal to 5, of the second medium - 1.8. Define the ratio of speeds V_2 / V_1, if the speed of light in the first medium is V_1 and in the second medium -V_2 (inscribe just number into the data field, e.g. 1.234)

.

Time left 0:44:53

Answer:

Question **2**

Not yet answered

Marked out of 2.00

The angle of refraction of light is equal to 30^0, and the relative index of refraction is - 1.2. Define the sine of the angle of incidence on the boundary surface of two transparent mediums (inscribe just number into the data field, e.g. 1.234).

.

Answer:

Question 3

Not yet answered

Marked out of 2.00

The interference pattern is observed on the screen. The wavelength of light is equal to 4000 A^0 (A^0 is Angstrom). The order of interference for maxima (bright lines) is equal to 4, define the corresponding path lengths difference of waves in Angstroms (inscribe just number into the data field, e.g. 1.234).

.

Answer:

Question 4

Not yet answered

Marked out of 2.00

The angle between the axes of polarizer and analyzer is equal 30^0. Define the I_A/I_P - a ratio of intensities of light passed in analyzer (I_A) and in polarizer (I_P) (inscribe just number into the data field, e.g. 1.23).

.

Answer:

Question 5

Not yet answered

Marked out of 2.00

The wavelength of light has increased in 4 times. Intensity of a scattered light will be decreased in ----- times (inscribe just number into the data field, e.g. 1,234)

Answer:

Question 6

Not yet answered

Marked out of 2.00

After passing a light through the layer of absorbing material the intensity of light has decreased in e - times. Thickness of the layer is 4 m. Define the absorption coefficient of material (inscribe just number into the data field, e.g. 1,234).

Answer:

Question 7

Not yet answered

Marked out of 2.00

Light traveling in air is reflected from a <u>medium</u>. Beam of light is completely plane-polarized when the incident (Brewster's) angle is equal to 33^0 . Define the index of refraction of medium (<u>inscribe just number into the data field, e.g. 1,234).</u>

.

Answer:

Question 8

Not yet answered

Marked out of 2.00

The equation $d^2E/dx^2 - (1/v^2)d^2E/dt^2 = 0$ is called as (v is the speed):

○ a. Equation of motion

○ b. Dynamic equation

○ c. Kinematic equation

○ d. Wave equation

Question 9

Not yet answered

Marked out of 2.00

Define the formula for speed of light in medium (c is the speed of light in vacuum):

   ○ a. $c\sqrt{\mu\epsilon}$

   ○ b. $\sqrt{\mu\epsilon}/c$

   ○ c. $1/\sqrt{\mu\epsilon}$

   ○ d. $c/\sqrt{\mu\epsilon}$

Question 10

Not yet answered

Marked out of 2.00

a is the width of transparent slits, c is the width of un-transparent strip. The diffraction grating constant is equals to:

   ○ a. $a+2c$

   ○ b. $a-c$

   ○ c. a

   ○ d. $a+c$

Question 11

Not yet answered

Marked out of 1.00

According to the law of refraction of light (n=sin(a)/sin(b)), n is named as:

Select one:

- ○ a.   The angle of refraction
- ○ b.   The relative index of refraction
- ○ c.   The absolute index of refraction

Question 12

Not yet answered

Marked out of 1.00

Which of the following is (are) true about light?
I) It is an electromagnetic wave
II) It does not propagate in a vacuum
III) Its maximum speed in vacuum is approximately 3×10^8 m/s

Select one:

- ○ a.   I and II only
- ○ b.   I and III only
- ○ c.   I only
- ○ d.   I, II and III
- ○ e.   III only

Question 13

Not yet answered

Marked out of 1.00

Two waves are coherent if the phase difference of waves is ----- .

Select one:

○ a.   dependent of time

○ b.   independent of speed

○ c.   dependent of speed

○ d.   independent of time

Question 14

Not yet answered

Marked out of 1.00

Is it true or false: "Tyndall scattering is particularly applicable to colloidal mixtures and suspensions".

Select one:

○ True

○ False

Question 15

Not yet answered

Marked out of 1.00

Is it true or false: A diffraction grating spreads out light into its component wavelengths, the resulting pattern is called a spectrum.

Select one:

○ True

○ False

Question 16

Not yet answered

Marked out of 1.00

In the case of abnormal dispersion, the index of refraction is greater for ----- .

Select one:

○ a. the lower speeds of light

○ b. the longer wavelengths

○ c. the shorter wavelengths

Question 17

Not yet answered

Marked out of 1.00

The electric field vector vibrates at all angles and the amplitudes of an electric vector are equal in all directions. The light is called as:

Select one:

○ a.   un-polarized

○ b.   plane-polarized

○ c.   partially polarized

Question 18

Not yet answered

Marked out of 1.00

Absorption of light is the result of ----- .

Select one:

○ a.   electromagnetic interaction of particles of material

○ b.   gravitational interaction of particles of material

○ c.   interaction of electromagnetic wave and particles of material

Question 19

Not yet answered

Marked out of 1.00

Is it true or false: "When light falls at Brewster's angle, the reflected and refracted rays are mutually perpendicular".

Select one:

○ True

○ False

Question 20

Not yet answered

Marked out of 1.00

Select the corresponding values and symbols:

λ Choose...

A Choose...

ω Choose...

υ Choose...