EXERCISE 6(A) PAGE NO: 137

Question: 1

Name three factors on which the deviation produced by a prism depends and state how does it depend on the factors stated by you.

Solution:

The deviation produced by the prism depends on the following four factors

(i) The angle of incidence – As the angle of incidence increases, first the angle of deviation decreases and reaches to a minimum value for a certain angle of incidence. By further increasing the angle of incidence, the angle of deviation is found to increase.

(ii) The material of prism (i.e, on refractive index) – For a given angle of incidence, the prism with a higher refractive index produces a greater deviation than the prism which has a lower refractive index.

(iii) Angle of prism- Angle of deviation increases with the increase in the angle of prism.

(iv) The colour or wavelength of light used - Angle of deviation increases with the decrease in wavelength of light.

Question: 2

How does the deviation produced by a triangular prism depend on the colour (or wavelength) of light incident on it?

Solution:

The deviation produced by a prism increases with the decrease in the wavelength of light incident on it.

Question: 3

How does the speed of light in glass change on increasing the wavelength of light?

Solution:

As the wavelength increases the speed of light in glass also increases

Question: 4

Which colour of white light travels (a) fastest (b) slowest, in glass?

Solution:

Red colour travels fastest while blue colour travels slowest in glass

Question: 5

Name the subjective property of light related to its wavelength.

Solution:

Colour of light is related to its wavelength.

Question: 6

What is the range of wavelength of the spectrum of white light in (i) ^0A and (ii) nm?
Solution:

(i) The range of wavelength in ^0A is 4000 ^0A to 8000 ^0A
(ii) The range of wavelength in nm 400 nm to 800 nm

Question: 7
(a) Write the approximate wavelengths for (i) blue and (ii) red light.

(b) The wavelengths of violet and red light are 4000 ^0A respectively. Which of the two has the higher frequency?
Solution:

(a) For blue light, approximate wavelength is 4800 ^0A and for red light, approximate wavelength is 8000 ^0A
Red light has the higher frequency.

Question: 8
Write the seven prominent colours present in white light in the order of increasing wavelength
Solution:
Violet, indigo, blue, green, yellow, orange and red are the seven prominent colours present in white light in the order of increasing wavelength.

Question: 9
Name the seven prominent colours of the white light spectrum in order of their increasing frequencies.
Solution:
Red, orange, yellow, green, blue, indigo and violet are the seven prominent colours of the white light spectrum in order of their increasing frequencies.

Question: 10

Name four colours of the spectrum of white light which have wavelength longer than blue light.
Solution:
The colours which have wavelength longer than blue light are green, yellow, orange and red.

Question: 11
Which colour of the white light is deviated by a glass prism (i) the most and, (ii) the least?
Solution:
When white light falls on a glass prism, each colour in it is refracted by a different angle, from which red colour is least deviated and violet most.

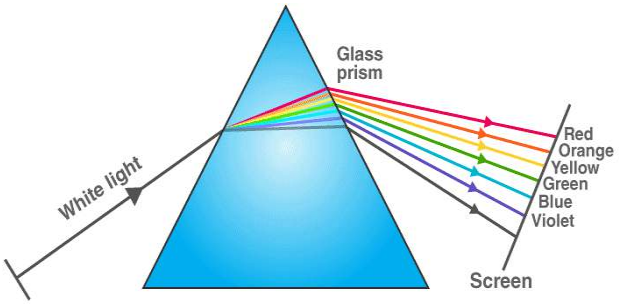
Question: 12
The wavelengths for the light of red and blue colours are nearly 7.8 x 10^{-7}m and 4.8 x 10^{-7} m respectively.
(a)Which colour has the greater speed in vacuum?
(b)Which colour has the greater speed in glass?
Solution:
(a) Both the colours have same speeds in vacuum.
(b) Red colour has a greater speed in glass.

Question: 13
Define the term dispersion of light.
Solution:
Dispersion of light is the phenomenon of splitting of a beam of white light into its seven constituent colours when passed through a transparent medium.

Question: 14
Explain the cause of dispersion of white light through a prism.
Solution:
When white light enters the first surface of a prism, light of different colours due to their different speeds in glass, gets deviated through different angles towards the base of the prism. Hence, the cause of dispersion of white light is the change in speed of light with wavelength.

Question: 15

Explain briefly, with the help of a neat labelled diagram, how does white light gets dispersed by a prism.
On which surface of prism, there is both the dispersion and deviation of light, and on which surface of prism, there is only the deviation of light?
Solution:
When white light enters the first surface of a prism, light of different colours due to their different speeds in glass, gets deviated through different angles towards the prism. Thus at the first surface of prism, the dispersion of white light into its constituent colours takes place.



On the second surface of prism, only refraction takes place and different colours are deviated through different angles, Thus the colours get further separated on refraction at the second surface (violet is deviated the most and red the least).

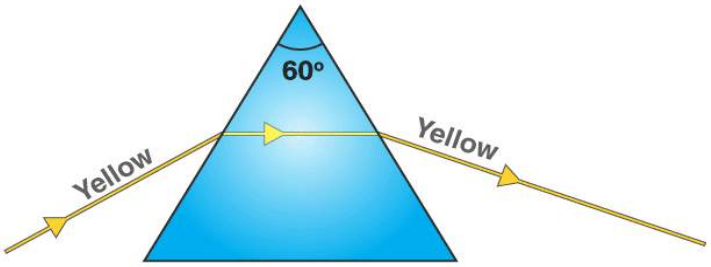
Question: 16
What do you understand by the term spectrum?
Solution:
On passing white light through a prism, the band of colours seen on a screen is called the spectrum.

Question: 17
A ray of white light is passed through a glass prism and spectrum is obtained on a screen.
(a)Name the seven colours of the spectrum in order.
(b)Do the colours have the same width in the spectrum?
(c)Which of the colour of the spectrum of white light deviates (i) the most?
(ii) the least?
Solution:
(a) Violet, Indigo, Blue, Green, Yellow, Orange and Red are the seven colours of the spectrum.
(b) No, different colours have different width in the spectrum.
(c) (i) The colour which deviated the most is violet and

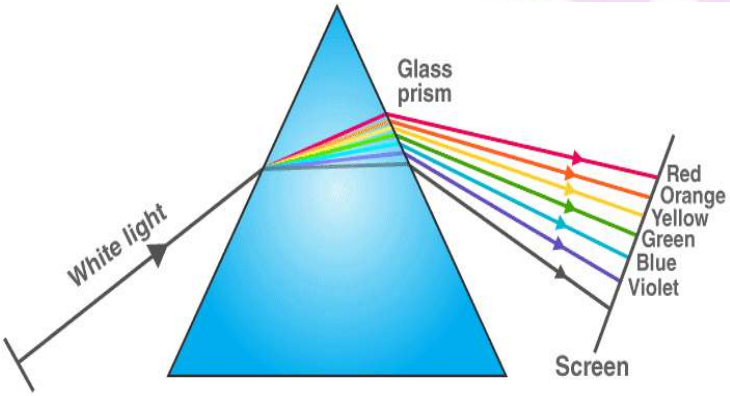
(ii) The colour which deviated the least is red

Question: 18

The diagram shown below shows the path taken by a narrow beam of yellow monochromatic light passing through an equiangular glass prism. If the yellow light is replaced by a narrow beam of white light incident at the same angle, draw another diagram to show the passage of the beam through the prism and label it to show the effect of prism on the white light.

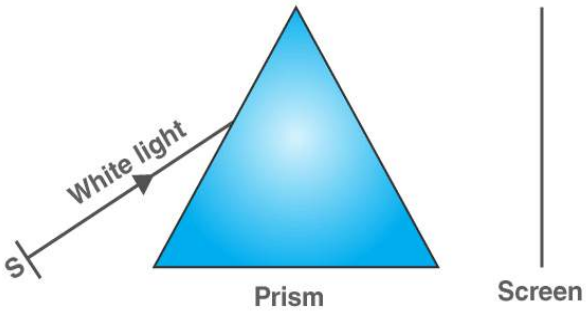


Solution:

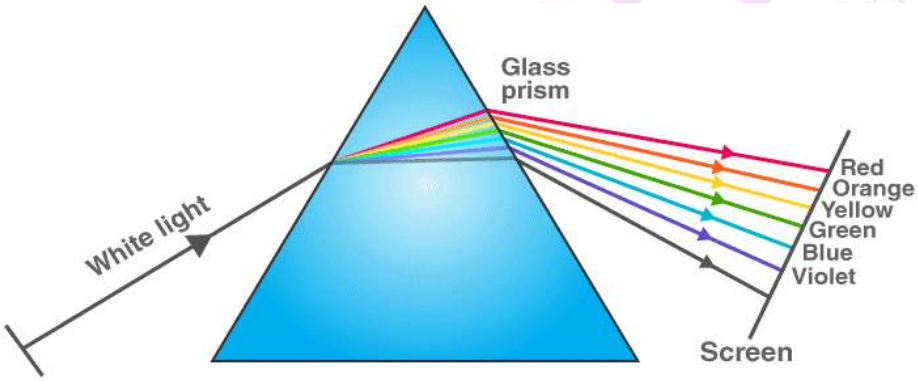


Question: 19

Figure shows a thin beam of white light from a source S striking on one face of a prism.



(a) Complete the diagram to show the effect of prism on the beam and to show what is seen on the screen.
(b) A slit is placed in between the prism and the screen to pass only the light of green colour. What will you then observe on the screen?
(c) What conclusion do you draw from the observation in part (b) above?
Solution:
(a) After dispersion through the prism, constituent colours of white light are seen on the screen.



(b) When a slit is introduced in between the prism and screen to pass only the light of green colour then only green light is observed on the screen.
(c) We conclude from the observation, that prism itself produces no colour.

Question: 20
(a) A beam of monochromatic light undergoes minimum deviation through an equiangular prism, how does the beam pass through the prism, with respect to its base?
(b) If white light is used in same way as in part (a) above, what change is expected in the emergent beam?
(c) What conclusion do you draw about the nature of white light in part (b)?
Solution:
(a) The light beam inside the Prism will be parallel to the base.

Under minimum deviation,
angle of incidence = angle of emergence

(b) White light splits into its constituent colours. That is spectrum is formed.
(c) We conclude that white light is polychromatic in nature.

MULTIPLE CHOICE TYPE

Question: 1

When a white light ray falls on a prism, the ray at its first surface suffers:

(a) no refraction
(b) only dispersion
(c) only deviation
(d) both deviation and dispersion

Solution:

When a white light ray falls on a prism, the ray at its first surface suffers both deviation and dispersion.

Question: 2

In the spectrum of white light by a prism, the colour at the extreme end opposite to the base of prism is:

(a) violet
(b) yellow
(c) red
(d) blue

Solution:

The colour at the extreme end opposite to the base of prism is red.

Question: 3

The wavelength range of white light is

(a) 4000 nm to 8000 nm
(b) 40 nm to 80 nm
(c) 400 nm to 800 nm
(d) 4 nm to 8 nm

Solution:

The wavelength range of white light is 400 nm to 800 nm

NUMERICALS

Question: 1

Calculate the frequency of yellow light of wavelength 550 nm. The speed of light is 3 × 10^8 m s^{-1}.

Solution:

Given,
Wavelength $\lambda = 550$ nm
$= 550 \times 10^{-9}$ m
Speed of light, $C = 3 \times 10^{8}$ m / s
We know that
Frequency = Speed of light / Wavelength
Frequency = $(3 \times 10^{8}) / (550 \times 10^{-9})$
Frequency = 5.4×10^{14} Hz

Question: 2

The frequency range of visible light is from 3.75×10^{14} Hz to 7.5×10^{14} Hz. Calculate its wavelength range. Take speed of light = 3×10^{8} m s^{-1}

Solution:

Given,
Speed of light, $c = 3 \times 10^{8}$ m / s
Frequency range = 3.75×10^{14} Hz to 7.5×10^{14} Hz
Speed of light = frequency × wavelength
For frequency = 3.75×10^{14} Hz
$\lambda = c / v$
$\lambda = (3 \times 10^{8}$ m / s) / $(3.75 \times 10^{14}$ Hz)
$\lambda = 8 \times 10^{-7}$
$\lambda = 8000\ ^{0}\text{A}$
For frequency = 7.5×10^{14} Hz
$\lambda = c / v$
$\lambda = (3 \times 10^{8}$ m / s) / $(7.5 \times 10^{14}$ Hz)
$\lambda = 4 \times 10^{-7}$ m
$\lambda = 4000\ ^{0}\text{A}$

Therefore wavelength range is $4000\ ^{0}\text{A}$ to $8000\ ^{0}\text{A}$

EXERCISE 6(B) PAGE NO: 144

Question: 1

(a) Give a list of at least five radiations, in the order of their increasing wavelength, which make up the complete electromagnetic spectrum.

(b) Name the radiation mentioned by you in part (a) which has the highest penetrating power.

Solution:

The complete electromagnetic spectrum in the increasing order of their wavelength are

(i) Gamma rays

(ii) X – rays

(iii) Ultraviolet rays

(iv)Visible light

(v) Infrared radiations

(b) Gamma rays has the highest penetrating power.

Question: 2

(a) Arrange the following radiations in the order of their increasing wavelength: X-rays, infrared rays, radio waves, gamma rays and micro waves.

(b) Name the radiation which is used for satellite communication?

Solution:

(a) Radiations in the order of their increasing wavelength are

(i) Gamma rays

(ii) X- rays

(iii) Infrared rays

(iv) Micro waves

(v) Radio waves

(b) Microwaves are used for satellite communication

Question: 3

A wave has a wavelength of 10^{-3} nm (a) Name the wave (b) State its one property different from light.

Solution:

(a) Gamma rays has a wavelength of 10^{-3} nm

(b) Gamma rays have large penetrating power

Question: 4

A wave has wavelength 50 ^{0}A

(a) Name the wave.

(b) State its speed in vacuum
(c) State its one use.
Solution:

(a) An electromagnetic wave having wavelength 50 ^{0}A is X - rays
(b) Speed of an electromagnetic wave in vacuum is 3×10^{8} m / s
(c) Since, they are stopped by bones, they are used for the detection of fracture in bones, teeth etc and for diagnostic purposes such as CAT scan in medical science.

Question: 5
(a) Name the high energetic invisible electromagnetic wave which helps in the study of structure of crystals.
(b) State one more use of the wave named in part (a).
Solution:
(a) X-rays are used in the study of cystals
(b) It is also used in detection of fracture in bones, teeth.

Question: 6
State the name and the range of wavelength of the invisible electromagnetic waves beyond the red end of visible spectrum.
Solution:
The electromagnetic waves beyond the red extreme of the visible light has certain radiations which produce a strong heating effect, are known as infrared radiations.

Range of wavelength is 8000 ^{0}A to 10^{7} ^{0}A

Question: 7
Name three radiations and their wavelength range which are invisible and beyond the violet end of the visible spectrum.
Solution:
The three rays which are invisible beyond the violet end of the visible spectrum are
(i) Gamma rays
(ii) X-rays
(iii) Ultraviolet rays
Wavelengths
(i) Gamma rays – below 0.01 nm
(ii) X-rays – 0.01 – 10 nm
(iii) Ultraviolet rays – 10 – 400 nm

Question: 8
Give the range of wavelength of the electromagnetic waves visible to us.
Solution:

The wavelength 4000 $^{0}_{A}$ to 8000 $^{0}_{A}$ of the electromagnetic waves visible to us.

Question: 9
Name the region beyond (i) the red end and (ii) the violet end, of the spectrum.
Solution:
(i) Beyond the red end of the spectrum lies the region known as infrared
(ii) Beyond the violet end of the spectrum lies the region known as ultraviolet

Question: 10
What do you understand by the invisible spectrum?
Solution:
The part of spectrum beyond the red extreme and the violet extreme to which our eyes do not respond is called the invisible spectrum

Question: 11
Name the radiation which can be detected by (a) a thermopile (b) a solution of silver chloride.
Solution:
(a) Infrared radiations can be detected by thermopile
(b) Ultraviolet radiations can be detected by silver chloride because in their presence silver chloride becomes dark.

Question: 12
State the approximate range of wavelength associated with (a) the ultraviolet rays, (b) the visible light, and (c) infrared rays.
Solution:

(a) Ultraviolet rays – wavelength range 100 $^{0}_{A}$ to 4000 $^{0}_{A}$

(b) Visible light – wavelength range 4000 $^{0}_{A}$ to 8000 $^{0}_{A}$

(c) Infrared radiations – wavelength range 8000 $^{0}_{A}$ to 10^{7} $^{0}_{A}$

Question: 13
Name the radiations of wavelength just (a) longer than 8×10^{-7} m, (b) shorter than 4

$\times 10^{-7}$ m

Solution:

(i) Infrared radiation are longer than 8×10^{-7} m

(ii) Ultraviolet radiations are shorter than 4×10^{-7} m

Question: 14

Name two electromagnetic waves of wavelength smaller than that of violet light. State one use of each.

Solution:

Ultraviolet radiations and X-rays are the electromagnetic waves of wavelength smaller than that of violet light.

Wavelength of ultraviolet radiations – 100 $^{0}_{A}$ to 4000 $^{0}_{A}$

Wavelength of X-rays – 0.1 $^{0}_{A}$ to 100 $^{0}_{A}$

Ultraviolet radiations are used for detecting purity of gems, eggs, ghee etc.

X-rays are used for detecting fracture in bones, teeth, etc

Question: 15

Give one use each of (a) microwaves, (b) ultraviolet radiations, (c) infrared radiations, and (d) gamma rays.

Solutions:

(a) Microwaves are used in radar communication

(b) Ultraviolet radiations are used in producing vitamin D in food of plants and animals.

(c) Infrared radiations are used in remote control of television and other gadgets.

(d) Gamma rays are used in industry to check welding.

Question: 16

Name the two waves (a) of lowest wavelength, (b) used for taking photographs in dark, (c) produced by the changes in the nucleus of an atom, (d) of wavelength nearly 0.1 nm

Solution:

(a) Gamma rays have lowest wavelength

(b) Infrared rays are used for taking photographs in dark

(c) Gamma rays are the waves produced by the changes in the nucleus of an atom

(d) X-rays have wavelength nearly 0.1 nm

Question: 17

Two waves A and B have wavelength 0.01 ^{0}A and 9000 ^{0}A respectively.
(a) Name the two waves.
(b) Compare the speeds of these waves when they travel in vacuum.
Solution:
(a) Wave A – Gamma rays and Wave B – Infrared radiations
(b) All electromagnetic waves travel with the speed of light in vacuum. Thus ratio of speeds of these waves in vacuum is 1: 1

Question: 18
Name two sources, each of infrared radiations and ultraviolet radiations.
Solution:
All red hot bodies such as a heated iron ball, flame, fire, etc. are the sources of infrared radiations.
The electric arc and sparks give ultraviolet radiations.

Question: 19
What are infrared radiations? How are they detected? State one use of these radiations.
Solution:

The electromagnetic waves of wavelength in the range of 8000 ^{0}A to 10^{7} ^{0}A are called infrared radiations

Detection:
If a thermometer with a blackened bulb is moved from the violet end towards the red end of the spectrum, it is observed that there is a very slow rise in temperature, but when it is moved beyond the red extreme, a rapid rise in temperature is noticed. It means that the region of spectrum beyond the red extreme has certain radiations which produce a strong heating effect which are invisible. These radiations are called the infrared radiations. Infrared radiations are used as signals during the war as they are not visible and they are not absorbed much in the medium.

Question: 20
What are ultraviolet radiations? How are they detected? State one use of these radiations
Solution:

Ultraviolet radiations are electromagnetic radiations of wavelength from 100 ^{0}A to 4000

0
A

Detection: If silver chloride solution is exposed to the electromagnetic waves starting from the red to the violet end and then beyond it. From the red end to the violet end it is observed that the solution remains almost unaffected. But beyond the violet end, the solution first turns violet and finally it becomes dark brown. Hence, there exist certain radiations beyond the violet extreme of the spectrum which are chemically more active than visible light. These radiations are called ultraviolet radiations.
Ultraviolet radiations are used for detecting the purity of gems, eggs, ghee etc.

Question: 21
Name three properties of ultraviolet radiations which are similar to the visible light.
Solution:
(a) Ultraviolet radiations travel in a straight line with a speed of 3×10^8 m s^{-1} in air or vacuum
(b) They obey the laws of reflection and refraction
(c) They strongly affect the photographic plate as they are chemically more active than the visible light.

Question: 22
Give two properties of ultraviolet radiations which differ from the visible light.
Solution:
Two properties of ultraviolet radiations different from the visible light
(a) Ultraviolet radiations can pass through quartz, but they are absorbed by glass.
(b) They are usually scattered by the dust particles present in the earth's atmosphere

Question: 23
Mention three properties of infrared radiations similar to the visible light.
Solution:
(a) Infrared radiations travel in straight lines like light, with a speed equal to 3×10^8 m s^{-1} in vacuum
(b) They obey the laws of reflection and refraction
(c) They are unaffected by electric and magnetic fields

Question: 24
Give two properties of infrared radiations which differ from the visible light.
Solution:
Two properties of infrared radiation different from the visible light

(a) They are absorbed by glass, but they are not absorbed by rock salt.
(b) They are detected by their heating property using a thermopile or a blackened bulb thermometer.

Question: 25
Name the material of prism required for obtaining the spectrum of (a) ultraviolet light, (b) infrared radiations
Solution:
(a) A quartz prism is required for obtaining the spectrum of ultraviolet light.
(b) Infrared radiations is obtained by passing radiations through a rock salt prism.

Question: 26
Name the radiations which are absorbed by the green house gases in the earth's atmosphere.
Solution:
Major green house gases which are present in the earth's atmosphere are water vapour, carbon dioxide, methane and ozone.
Infrared radiations are absorbed by the green house gases in the earth's atmosphere.

Question: 27
State one harmful effect each of the (a) ultraviolet and (b) infrared radiations.
Solution:
(a) Ultraviolet radiations cause health hazards like skin cancer if human body is exposed to them for a long period.
(b) Infrared radiations causes skin burns.

Question: 28
Give reason for the following:
(i) Infrared radiations are used for photography in fog
(ii) Infrared radiations are used for signals during the war.
(iii)The photographic darkrooms are provided with infrared lamps.
(iv)A rock salt prism is used instead of a glass prism to obtain the infrared spectrum.
(v)A quartz prism is required for obtaining the spectrum of the ultraviolet light.
(vi)Ultraviolet bulbs have a quartz envelope instead of glass.
Solution:
(i) Infrared radiations are used for photography in fog because they are not much scattered, so they can penetrate appreciably through it.
(ii) Infrared radiations are used as signals during the war as they are not visible and they

are not absorbed much in the medium.
(iii) Infrared lamps are used in dark rooms for developing photographs as they provide some visibility without affecting the photographic film.
(iv) Infrared spectrum can be obtained only by using a rock salt prism because the rock salt prism does not absorb the infrared radiations, whereas a glass prism absorbs them.
(v) A quartz prism is used for obtaining the spectrum of the ultraviolet light as they can pass through quartz whereas ordinary glass absorbs the ultraviolet light.
(vi) Ultraviolet bulbs have a quartz envelope instead of glass as they are not absorbed by quartz whereas ordinary glass absorbs the ultraviolet light.

MULTIPLE CHOICE TYPE

Question: 1

The most energetic electromagnetic radiations are:

(a) microwaves
(b) ultraviolet waves
(c) X- rays
(d) gamma rays

Solution:

The most energetic electromagnetic radiations are gamma rays

Question: 2

The source of ultraviolet light is:

(a) electric bulb
(b) red hot iron ball
(c) sodium vapour lamp
(d) carbon arc-lamp

Solution:

The source of ultraviolet light is carbon arc-lamp

Question: 3

A radiation P is focused by a proper device on the bulb of a thermometer. Mercury in the thermometer shows a rapid increase. The radiation P is

(a) infrared radiation
(b) visible light
(c) ultraviolet radiation
(d) X-rays

Solution:

The radiation P is infrared radiation

NUMERICALS

Question: 1

An electromagnetic wave has a frequency of 500MHz and a wavelength of 60cm.

(a) Calculate the velocity of the wave.

(b) Name the medium through which it is travelling.

Solution:

(a) Frequency = 500 MHz

$= 500 \times 10^6$ Hz

Wavelength = 60 cm

= 0.6 m

Velocity of wave = frequency × wavelength

$= 500 \times 10^6 \times 0.6$

$= 3 \times 10^8$ m / s

(b) Electromagnetic wave is travelling through air.

Question: 2

The wavelength of X-rays is 0.01 $\overset{0}{A}$. Calculate its frequency.

Solution:

Wavelength = 0.01 $\overset{0}{A}$

$= 0.01 \times 10^{-10}$ m

Speed of X-rays = 3×10^8 m / s

Speed of light = frequency × wavelength

$c = v / \lambda$

$v = c\lambda$

$v = (3 \times 10^8 \text{ m / s}) / (0.01 \times 10^{-10} \text{ m})$

$v = 3 \times 10^{20}$ Hz

EXERCISE 6(C) PAGE NO: 147

Question: 1
What is meant by scattering of light?
Solution:
When white light from the sun enters the earth's atmosphere, it gets scattered or the light spreads in all directions by the dust particles and air molecules present in the atmosphere. This phenomenon is called scattering of light.

Question: 2
How does the intensity of scattered light depend on the wavelength of incident light? State conditions when this dependence holds.
Solution:
The intensity of scattered light is found to be inversely proportional to the fourth power of the wavelength. This relation holds when the air molecules is smaller in size than the wavelength of incident light.

Question: 3
When sunlight enters the earth's atmosphere, state which colour of light is scattered the most and which the least.
Solution:
As the intensity of scattered light is inversely proportional to the fourth power of wavelength of light. Hence violet colour is scattered the most while red the least.

Question: 4
A beam of blue, green and yellow light passes through the the Earth's atmosphere. Name the colour which is scattered (a) the least (b) the most
Solution:
(a) Out of three radiations, yellow light has the highest wavelength. Hence, it gets scattered the least.
(b) Out of three radiations, blue light has the lowest wavelength. Hence, it gets scattered the most.

Question: 5
Which colour of white light is scattered the least? Give reason.
Solution:
The light having the longest wavelength is scattered the least. Hence, red coloured light is scattered the least.

Question: 6
The danger signal is red. Why?
Solution:
The wavelength of red light is longest in the visible light. So the light of red colour is scattered least by the air molecules of the atmosphere. Hence when compared to other colours the light of red colour can penetrate to a longer distance. Thus red light can be seen from the farthest distance in comparison to the light of other colours having the same intensity. Hence red light is used for danger signal so that the signal may be visible from the far distance even in fog, etc.

Question: 7
Solution:
Since there is no atmosphere on moon, therefore there is no scattering of light on moon surface. Hence to an observer on the surface of moon, except the light reaching directly from the sun, no light reaches the eyes of the observer. Thus the sun will appear black to an observer on the moon's surface.

Question: 8
What characteristic property of light is responsible for the blue colour of the sky?
Solution:
As the blue colour is scattered the most due to its short wavelength. Scattering property of light is responsible for the blue colour of the sky.

Question: 9
The colour of the sky, in direction of the sun is blue. Explain.
Solution:
As light travels through the atmosphere, it gets scattered in different directions by the air molecules present in its path. The blue light due to its short wavelength is scattered more than the red light of long wavelength. Thus the light directly from sun reaching our eye is rich in red colour while the light from all the other directions reaching our eye is the scattered blue light. Therefore the sky in direction of the sun is blue.

Question: 10
Why does the sun appear red at sunrise and sunset?
Solution:
The light from sun has to travel the longest distance of atmosphere to reach observer at the time of sunrise and sunset. Since blue light of short wavelength is lost due to scattering while the red light of long wavelength is scattered a little and is not lost much. Thus blue light is almost absent in sunlight reaching the observer and only the red light

reaches us.

Question: 11
The sky at noon appears white. Give reason.
Solution:
At noon the sun is overhead and the light travels a relatively shorter distance through the atmosphere to reach the earth. Due to short distance of light only blue light is scattered and most of the light is not scattered. Hence the sun appears white.

Question: 12
The clouds are seen white. Explain.
Solution:
The clouds are nearer the earth surface and contain dust particles. The water droplets present in clouds are bigger than wavelength of all seven colours of light. Hence the water droplets scatter the entire spectrum. Therefore the clouds appear white.

Question: 13
Give reason why the smoke from a fire looks white.
Solution:
Smoke appears white in colour because the size of the smoke particles are bigger than the wavelength of the light. White light is a mixture of large number of wavelength but they scatter at same extent since the condition of scattering is that size of particles should be smaller than the wavelength of light. Hence the scattered light appears white.

MULTIPLE CHOICE TYPE
Question: 1
In the white light of sun, maximum scattering by the air molecules present in the earth's atmosphere is for:
(a) red colour
(b) yellow colour
(c) green colour
(d) blue colour
Solution:
In the white light of sun, maximum scattering by the air molecules present in the earth's atmosphere is for blue colour.

Question: 2
To an astronaut in a space-ship, the earth appears:
(a) white

(b) red
(c) blue
(d) black
Solution:
To an astronaut in a space-ship, the earth appears blue