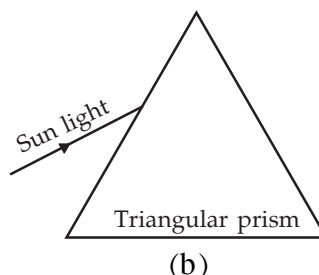
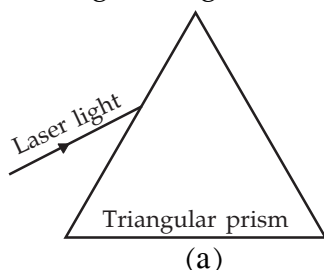


Unit : 09 Optical Phenomena

Concept : Refraction of Light

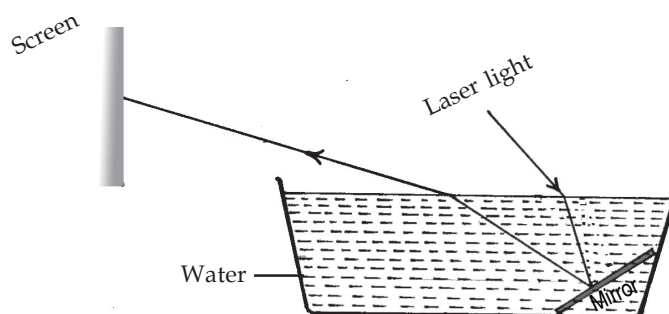
1. Complete the given figures.



Score (3) Time (4 minute)

Concept : Dispersion

2. Observe the given figure.



- (a) What change the light falling on the screen would undergo if sunlight is used instead of laser light? (1)
(b) What is this phenomenon called? (1)
(c) What is the reason for it? (2)

Score (4) Time (5 minute)

Concept : Rainbow

3. You know that rainbow appears due to the dispersion of sunlight occurring in the water particles in the atmosphere.
- (a) What is the colour seen at the outer edge of the rainbow? (1)
(b) Draw diagram of the dispersion of sunlight occurring in a water particle. (2)
(c) Why is rainbow seen as an arc? (2)

Score (5) Time (8 minute)

Concept : Rainbow

4. Reena says that a rainbow is formed whenever there are water particles in the atmosphere.
- (a) If Reena is correct why is it that a rainbow is not seen always? (1)
 - (b) Where is the rainbow seen usually? (1)
 - (c) How can a rainbow be created artificially? (2)

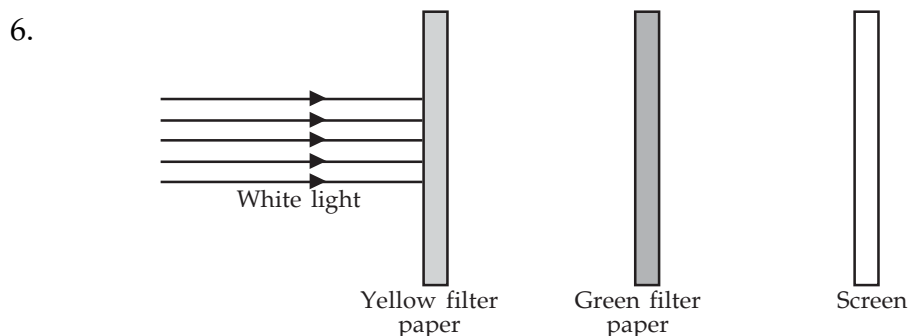
Score (4) Time (7 minute)

Concept : Opaque and transparent objects

5. In a dark room white light is allowed to fall on a green paper. The reflected light is made to fall on a white wall.
- (a) What is the colour that appears on the wall? (1)
 - (b) What colour will appear on the wall if green light is used instead of white? (1)

Score (2) Time (3 minute)

Concept : Opaque and transparent objects



- (a) What is the colour of the light falling on the white screen? (1)
- (b) What colour is obtained on the screen if blue filter paper is used instead of green? (2)

Score (3) Time (4 minute)

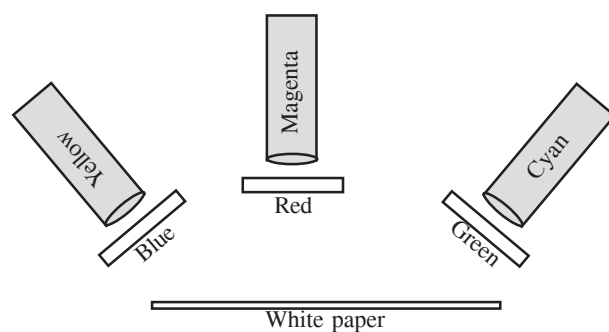
Concept : Opaque and transparent objects

7. At night, a blue car is parked under the light from a sodium vapour lamp.
- (a) What is the colour in which the car will be seen? (1)
 - (b) What must be the colour of the street light if the car is to be seen in its original colour? (2)

Score (3) Time (5 minute)

Concept : Primary colour, Secondary colour

8. The composite colours yellow, magenta and cyan pass through filters and fall on a white paper as shown in the picture.

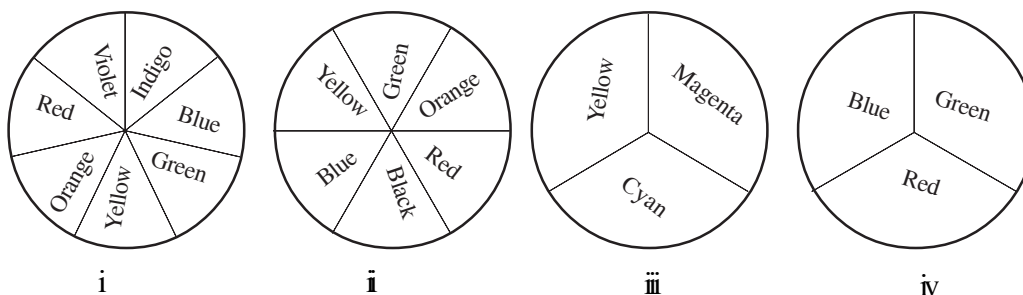


- Find two primary colours from the figure. Write them down. (1)
- What is the secondary colour formed out of them? (1)
- What is the complementary colour of this? (1)
- If the three sources of light are simultaneously illuminated. What will be the colour by which the white paper will be seen? Why? (1)

Score (4) Time (5 minute)

Concept : Primary colour, Secondary colour

9. The figure shows circular discs on which different colours are painted.

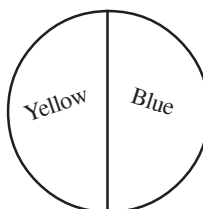


- If these discs are rotated at a high speed which of them will appear as white? (2)
- Why do they appear as white when rotated at a high speed? (1)
- Write an activity different from this by which white light can be produced by combining coloured light of the spectrum. (2)

Score (5) Time (6 minute)

Concept : Complementary colours

- 10.

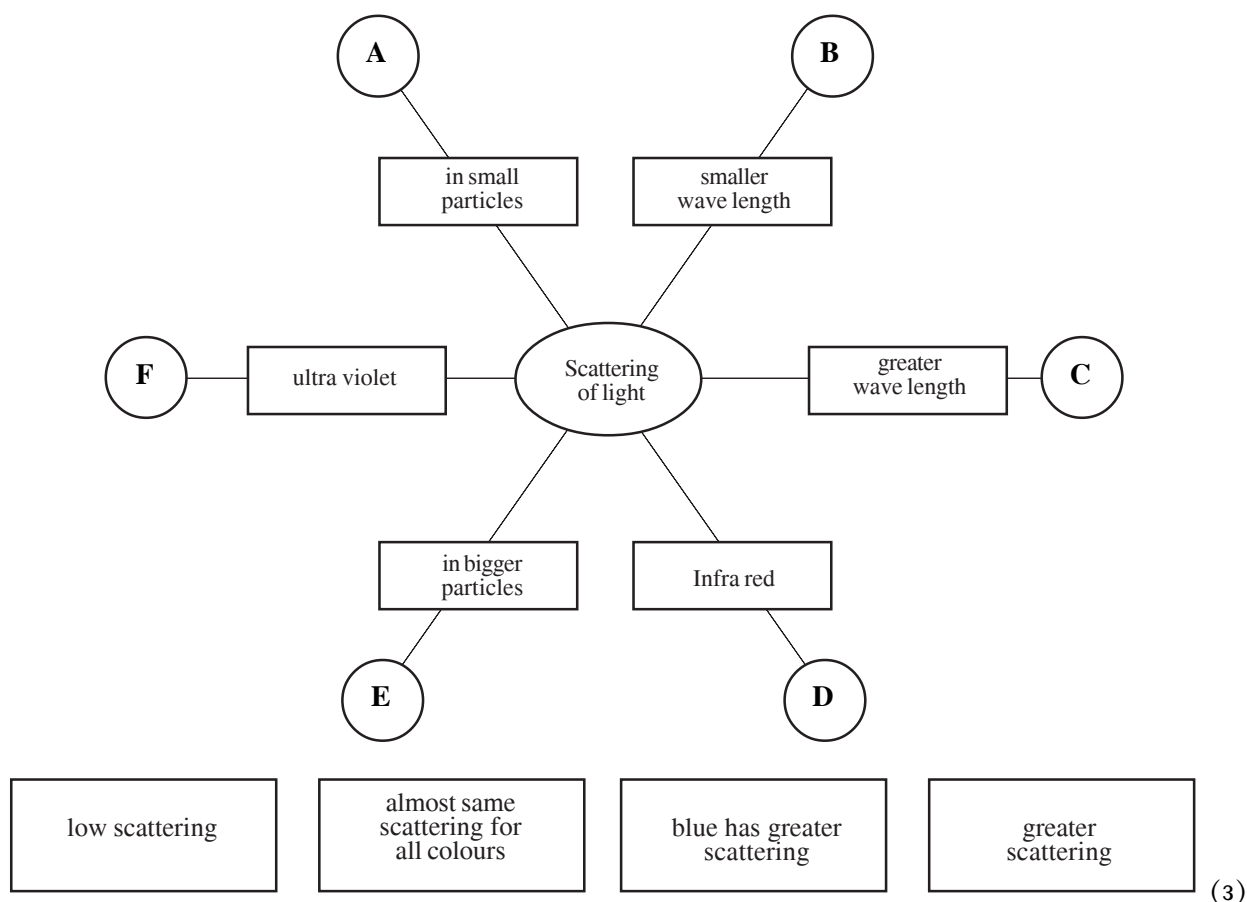


- If the circular disc shown in the figure is rotated at high speed what is the colour in which it will be seen? (1)
- What is the name by which this pair of colours known? (1)
- What is the colour in which the disc will be seen if red light is made to fall on it when rotated at high speed? (1)

Score (3) Time (5 minute)

Concept : Scattering of Light

11. Find out from the box, suitable explanations for A, B, C, D, E, F and write them down.



Score (3) Time (6 minute)

Concept : Ultraviolet and infrared radiations

12. Fill in the tabular column selecting suitable statements from the following.

- Produces vitamin D in the body.
- Helps to take photographs of distant objects.
- Able to penetrate into the body.
- Has a wavelength greater than that of visible light.
- Used in sonars.
- Able to make a chemical change in silver bromide.

| Ultra violet radiation | Infrared radiation |
|--|--|
| <ul style="list-style-type: none"> | <ul style="list-style-type: none"> |

Score (4) Time (5 minute)

Concept : Scattering

13. The same colour of light comes out from warning signals, the break light of vehicles etc. have the same colour.
- (a) Which is the colour of the light coming out? (1)
 - (b) What difference is there in their wave lengths compared to other colours? (1)
 - (c) What is the property that is responsible for making use of this colour in this way? (1)

Score (3) Time (5 minute)

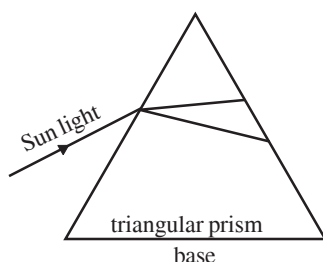
Concept : Scattering

14. You know that infrared is the radiation at one side of the electromagnetic spectrum of white light.
- (a) Then, which is the radiation on the other side? (1)
 - (b) What are the advantages and disadvantages of this radiation to the human body? (2)
 - (c) What happens to this radiation when it falls on a fluorescent substance? (2)

Score (5) Time (8 minute)

Concept : Synthesis of colours

15.



- (a) Complete the figure. (1)
- (b) What is the colour that comes to the base of the prism if composite yellow light is used instead of sun light? (1)
- (c) Explain the activities that helps to combine the component colours that come out of the prism. (1)

Score (3) Time (6 minute)

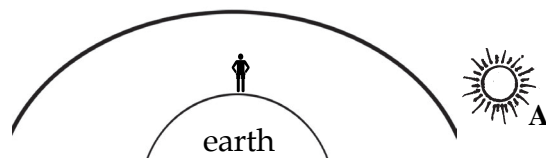
Concept : Fluorescence

16. Certain advertisement boards are seen to glow at night when light from the head lights of vehicles falls on them.
- (a) What is the name of this phenomenon? (1)
 - (b) What is the change that occurs to the light incident on the advertisement boards? (2)

Score (3) Time (5 minute)

Concept : The rising and setting sun and the sky

17.



- (a) What is the colour in which the sun is seen when it is at the position A. (1)
- (b) Which are the colours scattered more at that time? (1)
- (c) Write an experiment that helps to explain this phenomenon. (2)

Score (4) Time (7 minute)

Concept : Colour of the sky

18. Stars are visible on the moon even at day time.

- (a) Why is it not possible to see the stars in the sky from the earth at day time? (1)
- (b) How is this phenomenon related to the blue colour of the sky? (2)
- (c) Why does the sky of the moon appear dark? (1)

Score (4) Time (8 minute)
