Light & Colours of Light

A. Choose the correct answer:

1. Which of the following is the primary source of light on Earth?

A) Moon
B) Sun
C) Stars
D) Fireflies

2. White light is composed of how many colors?

A) 3
B) 5
C) 7
D) 9

3. Which color of light has the longest wavelength?

A) Blue
B) Red
C) Green
D) Violet

B. Fill in the Blanks:

1. Light travels in a _____ line.
2. The splitting of white light into its seven constituent colors is called _____.
3. An object appears black when it _____ all colors of light and reflects none.

C. Case Study:

A science teacher, Mr. Verma, conducted an experiment to demonstrate the concept of light and color. He passed white light through a glass prism and observed a band of different colors appearing on the other side. He then used different colored filters and placed them in front of a flashlight.

- When he used a red filter, only red light was visible.
- When he used a blue filter, only blue light was seen.
- When he mixed red and blue lights, he observed a magenta color.

Questions & Answers:

1. What phenomenon did Mr. Verma demonstrate using the glass prism?
2. Why did the red filter allow only red light to pass through?
3. What does the experiment show about how colors mix?
4. If a green object is placed under red light, what color would it appear?

D. Short Answer Questions:

1. What is the speed of light in a vacuum?
2. How does a prism separate white light into different colors?
3. Why does the sky appear blue during the day?

E. Long Answer Questions:

1. Explain the concept of reflection, refraction, and dispersion of light with examples.
2. Describe how colors are formed and how they interact when mixed.
3. Discuss the role of light in our daily lives and its importance in technology and nature.