# NDA-CDS 1 2025

# GS

LIVE

# PHYSICS

## HUMAN EYE & COLOURFUL WORLD

# MCQS


NAVJYOTI SIR

SSBCrack EXAMS

# 24 Jan 2025 Live Classes Schedule

| | | |
|---|---|---|
| 9:00AM | 24 JANUARY 2025 DAILY DEFENCE UPDATES | DIVYANSHU SIR |
| 10:00AM | 24 JANUARY 2025 DAILY CURRENT AFFAIRS | RUBY MA'AM |

## AFCAT 1 2025 LIVE CLASSES

| | | |
|---|---|---|
| 12:30PM | REASONING - FIGURE ANALOGY | RUBY MA'AM |
| 3:00PM | STATIC GK - SPORTS | DIVYANSHU SIR |
| 5:30PM | MATHS - TIME & WORK | NAVJYOTI SIR |

## NDA 1 2025 LIVE CLASSES

| | | |
|---|---|---|
| 10:00AM | MATHS - TRIGONOMETRY - CLASS 2 | NAVJYOTI SIR |
| 11:30AM | MEDIEVAL HISTORY - CLASS 2 | RUBY MA'AM |
| 1:00PM | PHYSICS - HUMAN EYE & THE COLOURFUL WORLD | NAVJYOTI SIR |

## CDS 1 2025 LIVE CLASSES

| | | |
|---|---|---|
| 11:30AM | MEDIEVAL HISTORY - CLASS 2 | RUBY MA'AM |
| 1:00PM | PHYSICS - HUMAN EYE & THE COLOURFUL WORLD | NAVJYOTI SIR |
| 5:30PM | MATHS - TIME & WORK | NAVJYOTI SIR |



# HUMAN EYE AND COLOURFUL WORLD

# PRACTISE MCQs

**Presbyopia can be corrected by _____ lens.**

A. Convex → Hypermetropia

B. Concave → Myopia

C. Bi-focal → Presbyopia

D. Cylindrical

**Presbyopia can be corrected by _____ lens.**

A. Convex

B. Concave

**C. Bi-focal**

D. Cylindrical

The part of the human eye on which the image is formed is

(a) pupil

(b) cornea

(c) retina

(d) iris

The part of the human eye on which the image is formed is

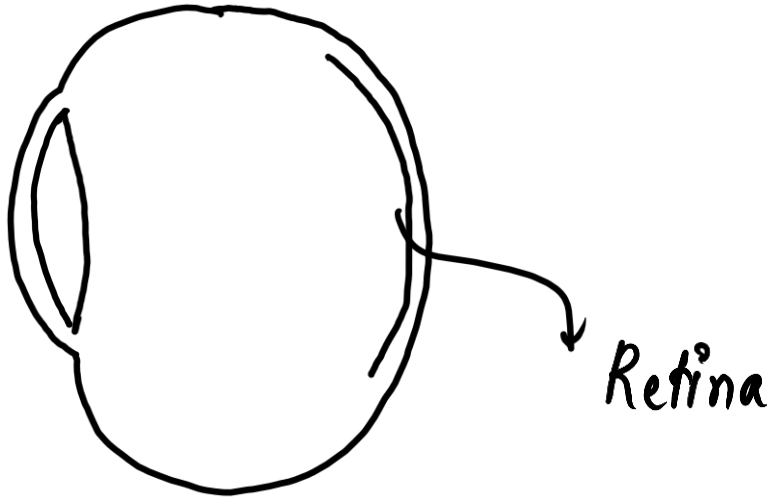
(a) pupil

(b) cornea

(c) retina

(d) iris

**Answer: (C)**



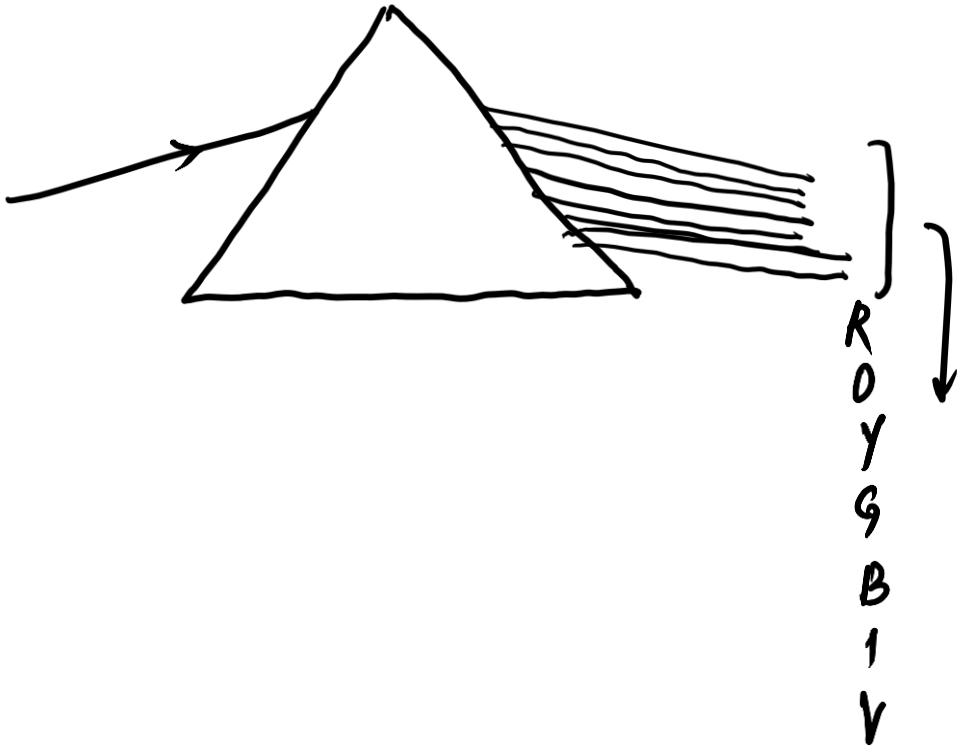
**A prism causes**

A. Only Dispersion

B. Only Deviation

C. Both Dispersion and Deviation ✓

D. Neither Dispersion nor Deviation



**A prism causes**

A. Only Dispersion

B. Only Deviation

**C. Both Dispersion and Deviation**

D. Neither Dispersion nor Deviation

**Identify the correct statement(s) ,**

**1) Iris controls the size of the pupil.** ✓

**2) Pupil controls the size of the Iris.** ✗

**3) The Eye-lens forms an inverted real image of the object.** ✓

**4) Pupil controls the amount of light entering the eye.** ✓

A. 1 , 2 and 4

B. 1, 3 and 4 ✓

C. 1 and 4

D. 2 , 3 and 4

**Identify the correct statement(s) ,**

**1) Iris controls the size of the pupil.**

**2) Pupil controls the size of the Iris.**

**3) The Eye-lens forms an inverted real image of the object.**

**4) Pupil controls the amount of light entering the eye.**

A. 1 , 2 and 4

**B. 1, 3 and 4**

C. 1 and 4

D. 2 , 3 and 4

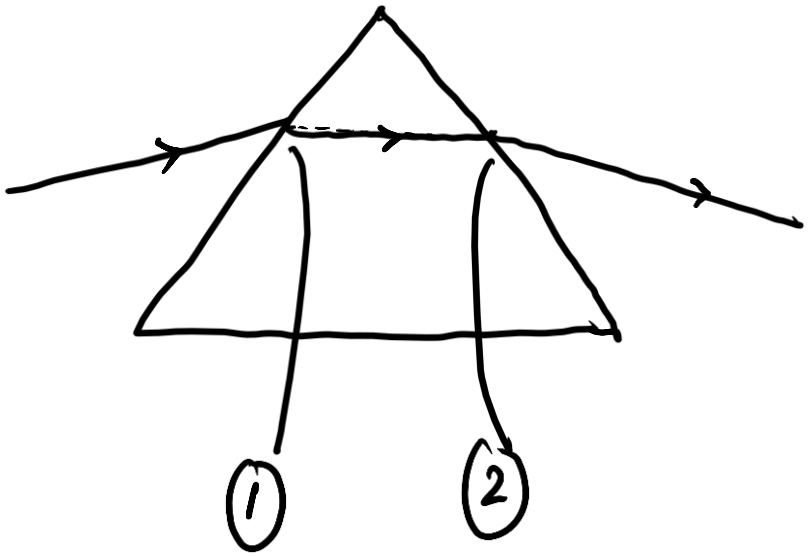
**How many times does a ray of light bend on passing through a prism ?**

A. Once

B. Twice

C. Thrice

D. Four Times




2 times bending

**How many times does a ray of light bend on passing through a prism ?**

A. Once

**B. Twice**

C. Thrice

D. Four Times

Light enters the eye through a thin membrane called

(a) retina

(b) cornea

(c) pupil

(d) iris

Light enters the eye through a thin membrane called

(a) retina

(b) cornea

(c) pupil

(d) iris

**Answer: (B)**

Which of the following are the primary colours of light ?

(a) Yellow, Red and Green

(b) Blue, Red and Green

(c) Violet, Red and Yellow

(d) Indigo, Violet and Green

Which of the following are the primary colours of light ?

(a) Yellow, Red and Green

(b) Blue, Red and Green

(c) Violet, Red and Yellow

(d) Indigo, Violet and Green

**Answer: (B)**

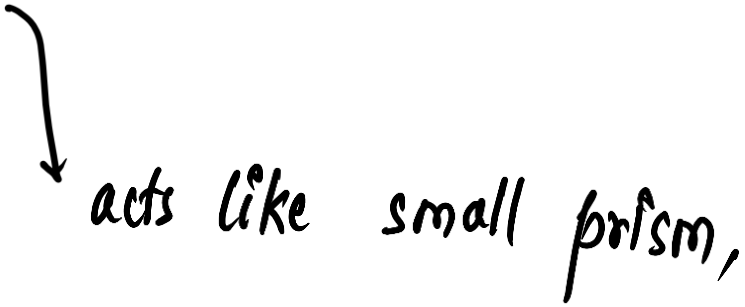
**During the formation of rainbow , dispersion of sunlight is done by**

A. Tiny Air molecules

B. Dust Particles of Atmosphere

C. Tiny Droplets of Rain Water Suspended in Air

D. Air and Water.



**During the formation of rainbow , dispersion of sunlight is done by**

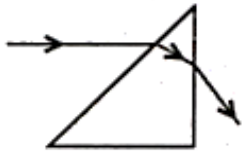
A. Tiny Air molecules

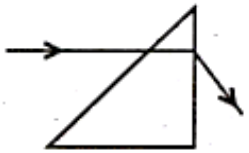
B. Dust Particles of Atmosphere

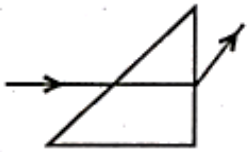
**C. Tiny Droplets of Rain Water Suspended in Air**

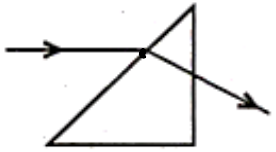
D. Air and Water.

Which one of the following figures correctly shows the path of a ray of light through a glass prism ?

(a) 

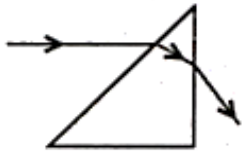
(b) 

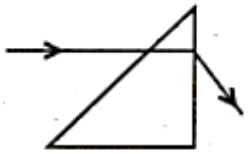
(c) 

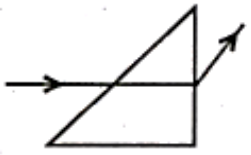
(d) 

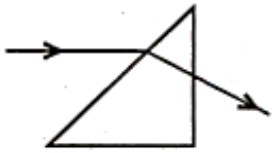
2 times bending is not happening,

Which one of the following figures correctly shows the path of a ray of light through a glass prism ?

(a) 

(b) 

(c) 

(d) 

**Answer: (A)**

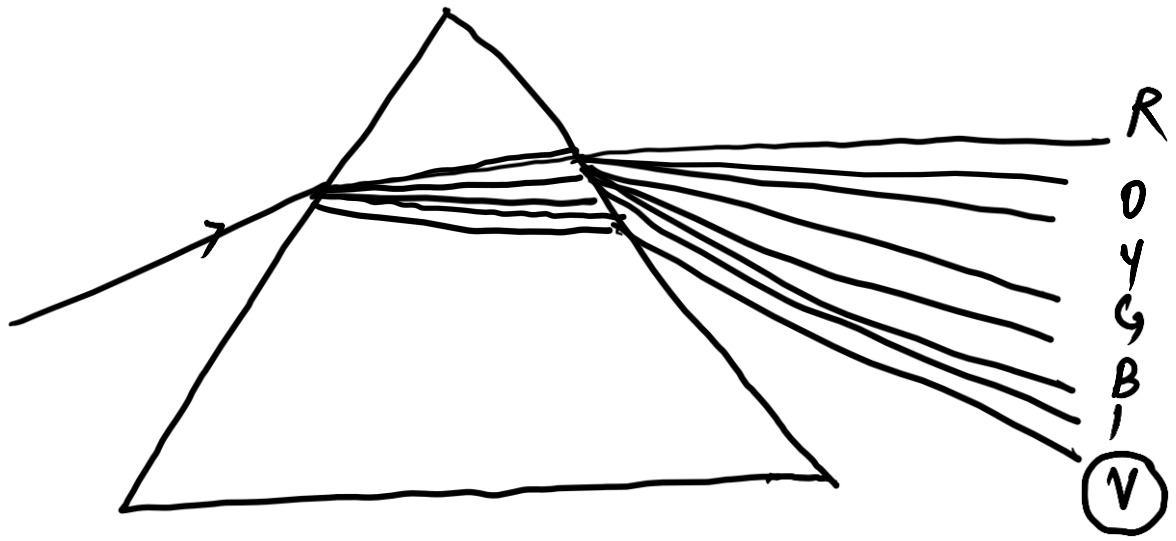
A glass prism splits white light into different colours. This phenomenon is called dispersion of light by prism. Which one of the following statements is correct ?

(a) Red light will deviate the most and it is because of the reflection of light.

(b) Violet light will deviate the most and it is because of the refraction of light.

(c) Red light will deviate the most and it is because of the refraction of light.

(d) Violet light will deviate the most and it is because of the reflection of light.



A glass prism splits white light into different colours. This phenomenon is called dispersion of light by prism. Which one of the following statements is correct ?

(a) Red light will deviate the most and it is because of the reflection of light.

(b) Violet light will deviate the most and it is because of the refraction of light.

(c) Red light will deviate the most and it is because of the refraction of light.

(d) Violet light will deviate the most and it is because of the reflection of light.

**Answer: (B)**

**A certain person has minimum distance of distinct vision of 150 cm. He wants to read at a distance of 25 cm. What is the nature of the eye defect ?**

A. Myopia

B. Hypermetropia → far-sightedness

C. Presbyopia

D. Cataract

**A certain person has minimum distance of distinct vision of 150 cm. He wants to read at a distance of 25 cm. What is the nature of the eye defect ?**

A. Myopia

**B. Hypermetropia**

C. Presbyopia

D. Cataract

Human eye can see objects at different distances with contrasting illuminations. This is due to

(a) far-sightedness

(b) near-sightedness

(c) far-sightedness and near-sightedness

(d) accommodation of eye

Human eye can see objects at different distances with contrasting illuminations. This is due to

(a) far-sightedness

(b) near-sightedness

(c) far-sightedness and near-sightedness

(d) accommodation of eye

**Answer: (D)**

**Which colour of sky will appear to the pessengers  flying at high altitudes,**

A. Green

B. Orange

C. Blue

D. Black

**Which colour of sky will appear to the pessengers  flying at high altitudes,**

A. Green

B. Orange

**C. Blue**

D. Black

Tyndall effect is a phenomenon of

(a) scattering of light by the colloidal particles.

(b) refraction of light by the colloidal particles.

(c) dispersion of light by dust particles.

(d) refraction of light by dust particles.

Tyndall effect is a phenomenon of

(a) scattering of light by the colloidal particles.

(b) refraction of light by the colloidal particles.

(c) dispersion of light by dust particles.

(d) refraction of light by dust particles.

**Answer: (A)**

**The dispersion of light into its components by prism is due to**

A. Each component gets deviated by the same angle of Refraction. ✗

B. Each component gets deviated by a different angle of Refraction. ✓

C. Reflection of each component light by different angle.

D. Reflection of each component light by same angle.

each light has different refractive index

ROYGBIV

**The dispersion of light into its components by prism is due to**

A. Each component gets deviated by the same angle of Refraction.

**B. Each component gets deviated by a different angle of Refraction.**

C. Reflection of each component light by different angle.

D. Reflection of each component light by same angle.

The streaming of light beams coming from the Sun through trees is said to have suggested that light travels in straight line. The particles on the path of light beams are visible to us because

(a) dust particles in the air reflect light into our eyes

(b) dust particles in the air scatter light into our eyes

(c) dust particles in the air refract light into our eyes

(d) dust particles in the air polarize light into our eyes

The streaming of light beams coming from the Sun through trees is said to have suggested that light travels in straight line. The particles on the path of light beams are visible to us because

(a) dust particles in the air reflect light into our eyes

(b) dust particles in the air scatter light into our eyes

(c) dust particles in the air refract light into our eyes

(d) dust particles in the air polarize light into our eyes

**Answer: (B)**

**When white light passes through a prism , it splits into its component colours. This phenomenon is**

A. Dispersion ✓

B. Reflection

C. Spectrum

D. Refraction

band of 7 colours ⇒ spectrum

**When white light passes through a prism , it splits into its component colours. This phenomenon is**

A. **Dispersion**

B. Reflection

C. Spectrum

D. Refraction

Consider the following statements about a microscope and a telescope :

1. Both the eyepiece and the objective of a microscope are convex lenses. ✓
2. The focal length of the objective of a telescope is larger than the focal length of its eyepiece. ✓
3. The magnification of a telescope increases with the increase in focal length of its objective. ✓
4. The magnification of a microscope increases with the increase in focal length of its objective. ✗

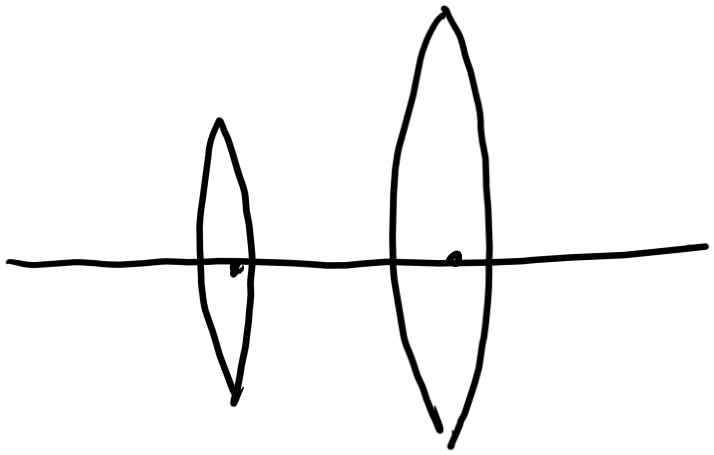
Which of the statements given above are correct?

(a) 1 and 3 only

(b) 1 and 4

(c) 2, 3 and 4

(d) 1, 2 and 3 ✓



$\left(1+\frac{f_o}{f_e}\right)$

$\frac{v_o}{u_o}\left(1+\frac{D}{f_e}\right)$ ≡

Consider the following statements about a microscope and a telescope :

1. Both the eyepiece and the objective of a microscope are convex lenses.
2. The focal length of the objective of a telescope is larger than the focal length of its eyepiece.
3. The magnification of a telescope increases with the increase in focal length of its objective.
4. The magnification of a microscope increases with the increase in focal length of its objective.

Which of the statements given above are correct?

*(a)* 1 and 3 only

*(b)* 1 and 4

*(c)* 2, 3 and 4

*(d)* 1, 2 and 3

**Answer: (D)**

**The eyeball of A person has become slightly larger. What kind of lens Should the person wear to correct the defect in the vision caused by This change in the size of the eyeball ?**

A. Concave Lens

B. Convex Lens

C. Cylindrical Lens

D. Plane Glass

myopic eye

**The eyeball of A person has become slightly larger. What kind of lens Should the person wear to correct the defect in the vision caused by This change in the size of the eyeball ?**

A. **Concave Lens**
B. Convex Lens
C. Cylindrical Lens
D. Plane Glass

**A Student Is Not Able To See The Blackboard Question When Seated At A Distance Of 5 m From The Board. The Defect He Is Suffering From Is**

A. Myopia

B. Presbyopia

C. Hypermetropia

D. Astigmatism

**A Student Is Not Able To See The Blackboard Question When Seated At A Distance Of 5 m From The Board. The Defect He Is Suffering From Is**

A. **Myopia**

B. Presbyopia

C. Hypermetropia

D. Astigmatism

CDS - PYQ – 2024 - II

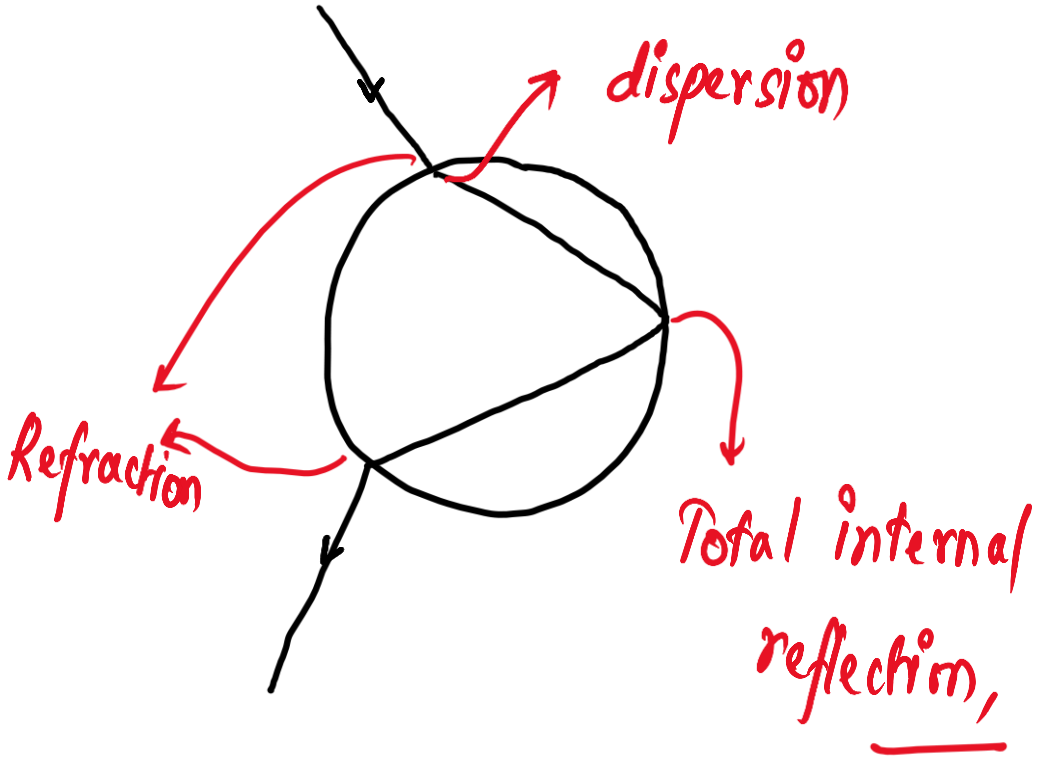
The phenomenon of rainbow formation by water droplets involves :

(a) single refraction of sunlight

(b) one internal reflection of sunlight

(c) two internal reflections of sunlight

(d) both refraction and internal reflection of sunlight



**CDS - PYQ – 2024 - II**

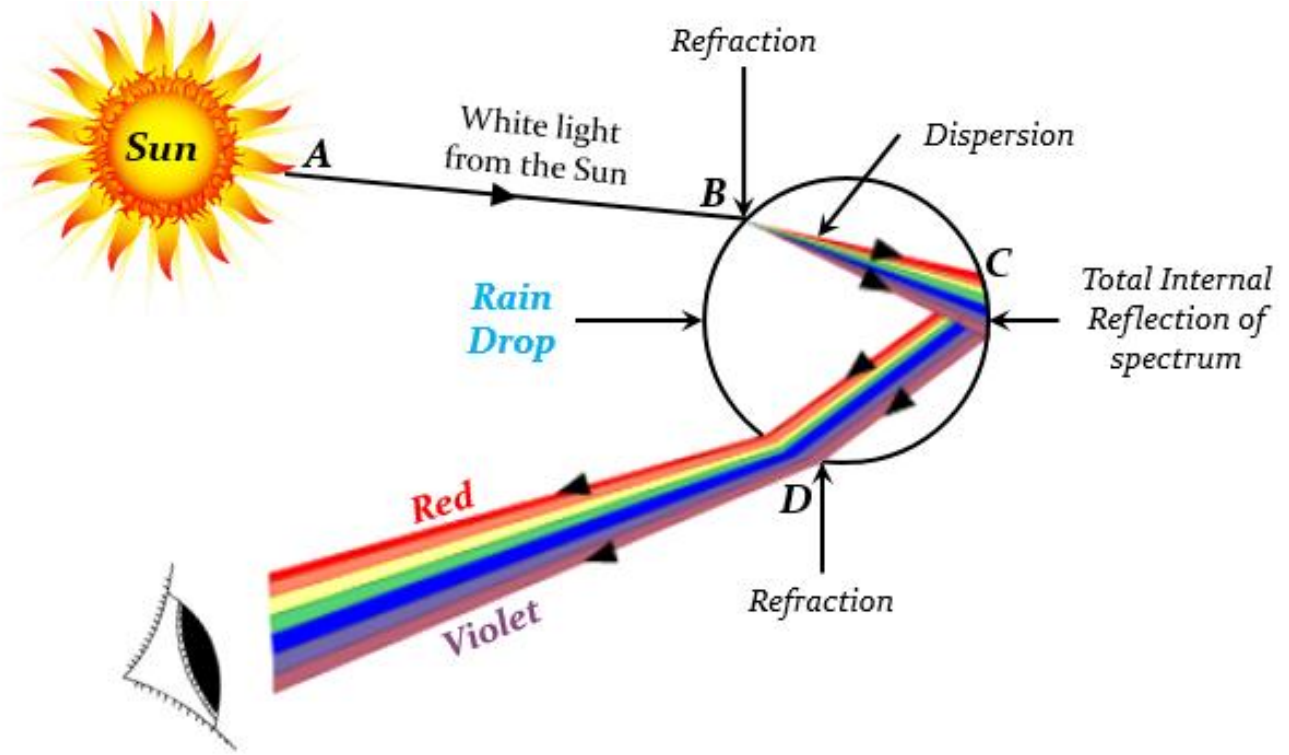
The phenomenon of rainbow formation by water droplets involves :

(a) single refraction of sunlight

(b) one internal reflection of sunlight

(c) two internal reflections of sunlight

(d) both refraction and internal reflection of sunlight




**Ans: (d)**

CDS - PYQ – 2024 - II

Which of the following statements for persons suffering from presbyopia is/are correct ?

1. They cannot distinguish colours. ✗
2. It usually develops with ageing. ✓
3. They wear either bi-focal lenses consisting of both concave and convex lenses or progressive lenses. ✓

Select the answer using the code given below :

(a) 1 only

(b) 2 only

(c) 1 and 3

(d) 2 and 3

**CDS - PYQ – 2024 - II**

Which of the following statements for persons suffering from presbyopia is/are correct ?

1. They cannot distinguish colours.
2. It usually develops with ageing.
3. They wear either bi-focal lenses consisting of both concave and convex lenses or progressive lenses.

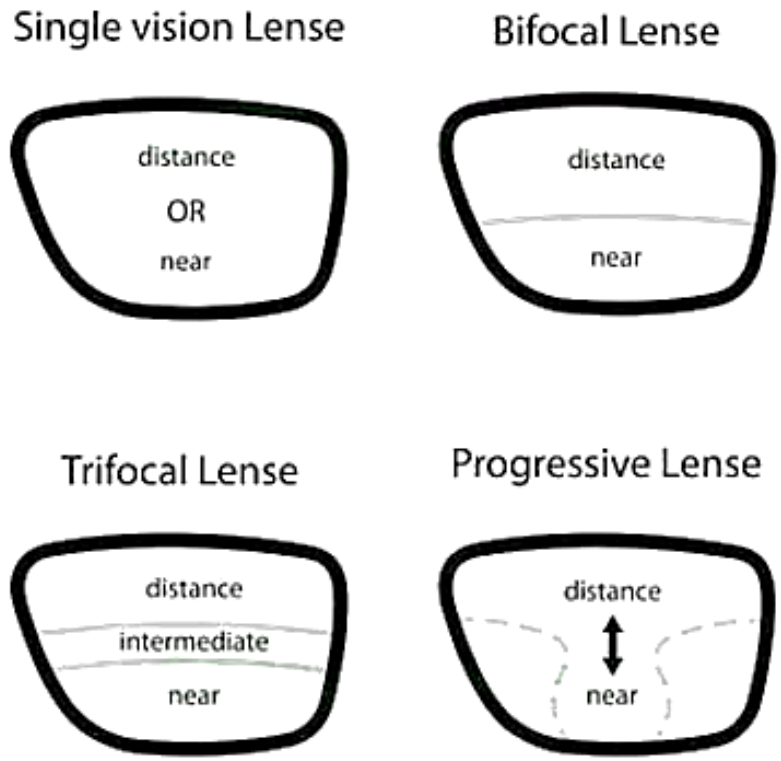
Select the answer using the code given below :

(a) 1 only

(b) 2 only

(c) 1 and 3

(d) 2 and 3




**Ans: (d)**

NDA - PYQ – 2024 - II

Which one among the following is correct for a person suffering from myopia ?

(a) The person can see near objects clearly

(b) The person can see distant objects clearly

(c) The person cannot distinguish colours

(d) The person can neither see near objects nor distant objects clearly

NDA - PYQ – 2024 - II

Which one among the following is correct for a person suffering from myopia ?

(a) The person can see near objects clearly

(b) The person can see distant objects clearly

(c) The person cannot distinguish colours

(d) The person can neither see near objects nor distant objects clearly

Answer: (A)

NDA - PYQ – 2024 - I

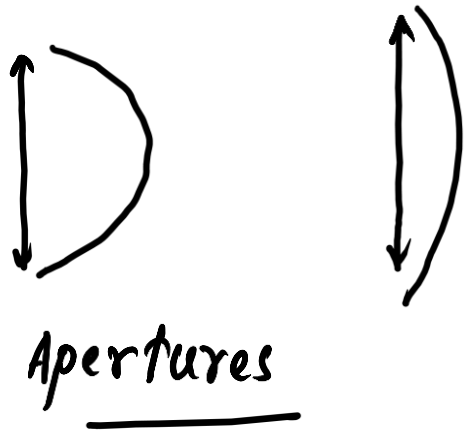
The human eye is like a camera that has a lens with :

(a) fixed focal length and fixed aperture size.

(b) variable focal length and fixed aperture size.

(c) fixed focal length and variable aperture size.

(d) variable focal length and variable aperture size. ✓



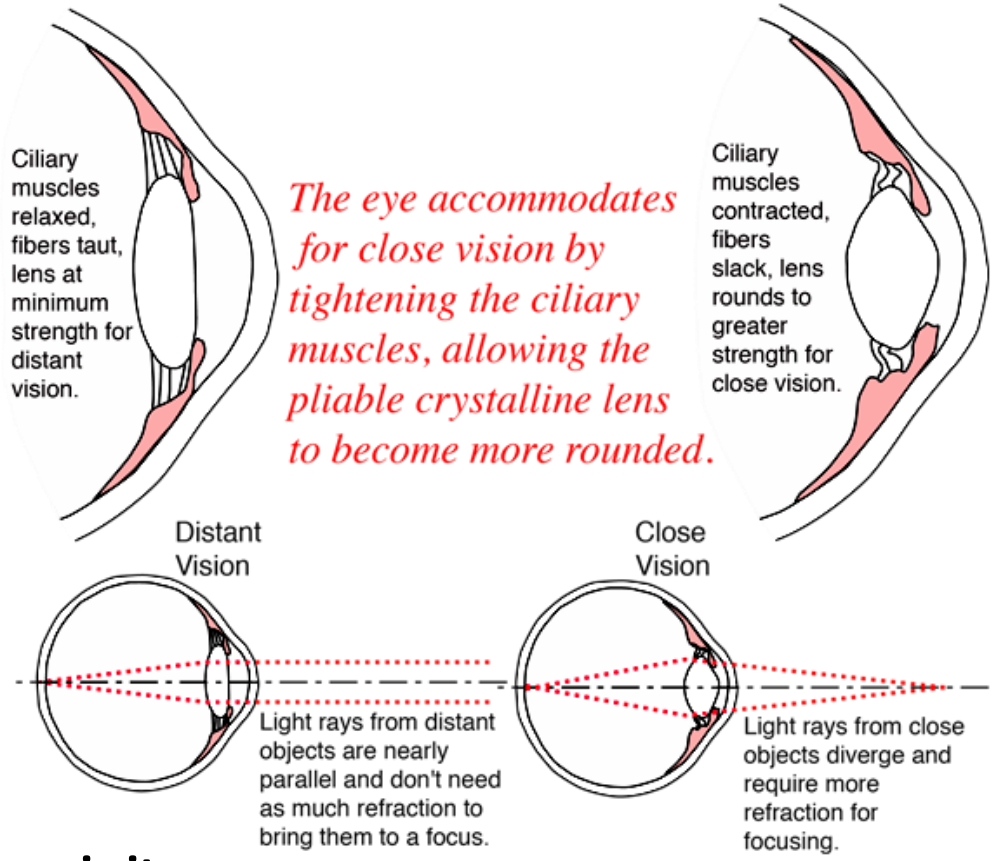
The human eye is like a camera that has a lens with :

(a) fixed focal length and fixed aperture size.

(b) variable focal length and fixed aperture size.

(c) fixed focal length and variable aperture size.

(d) variable focal length and variable aperture size.




**The pupil (appearing as a black hole) of the eye is its aperture and the iris is its diaphragm. In humans, the pupil can constrict to as small as 2 mm (*f*/8.3) and dilate to larger than 8 mm (*f*/2.1) in some individuals.**

**ANS : D**

PYQ – 2024 - I

Which of the following is ***not*** a part of compound microscope ?

(a) Mirror

(b) Stage

(c) Clip

(d) Retina

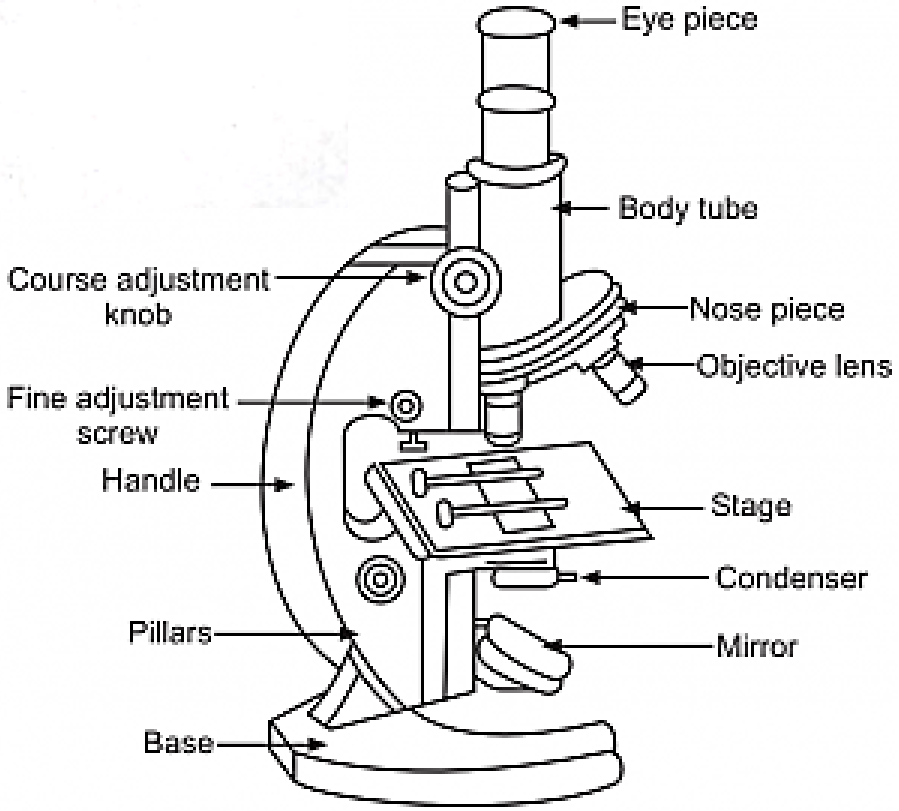
Which of the following is ***not*** a part of compound microscope ?

(a) Mirror

(b) Stage

(c) Clip

(d) Retina




**ANS : D**

PYQ – 2024 - I

A microscope may be a combination of :

(a) two convex lenses. ✓

(b) a convex and a concave lens.

(c) two concave lenses.

(d) a convex lens and a convex mirror.

PYQ – 2024 - I

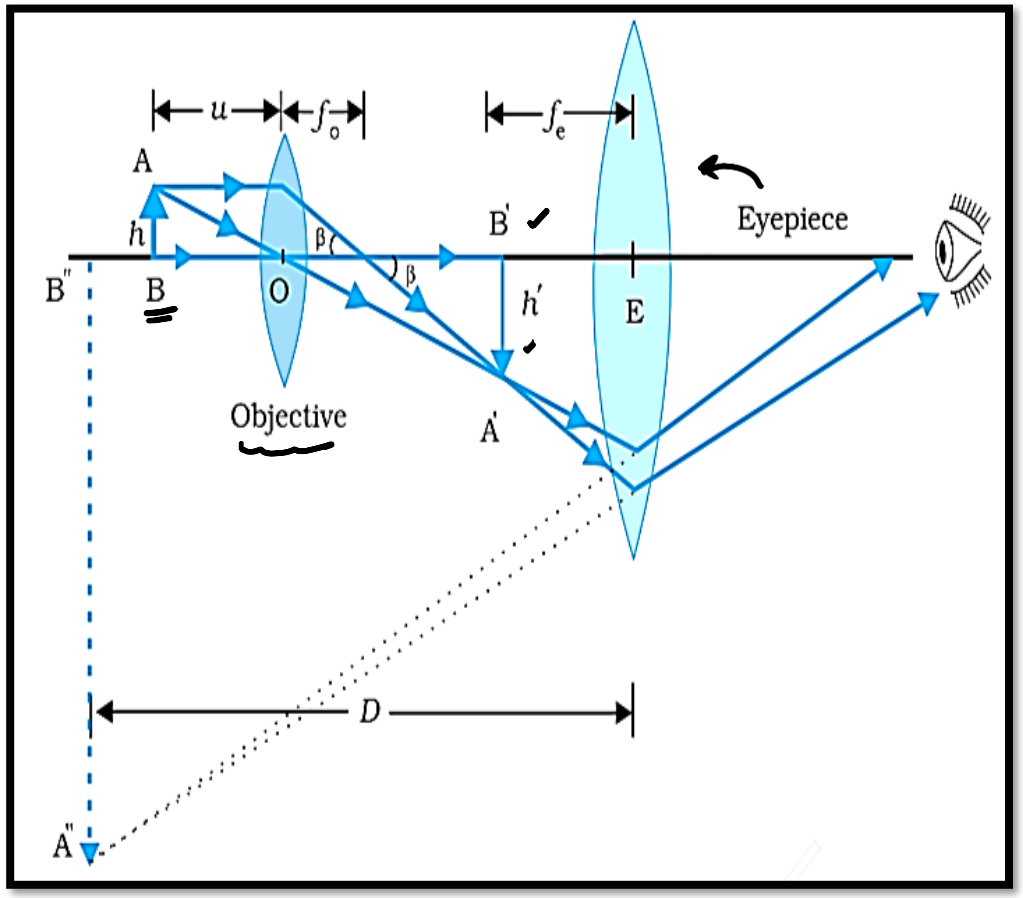
A microscope may be a combination of :

(a) two convex lenses.

(b) a convex and a concave lens.

(c) two concave lenses.

(d) a convex lens and a convex mirror.

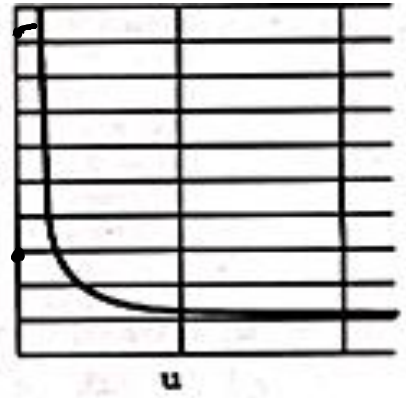



ANS : A

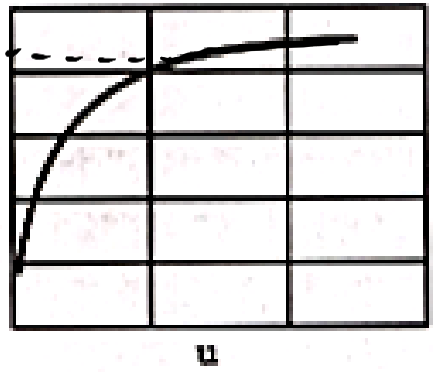
**For a human eye, where u is the distance of an object from the eye, f is the focal length of the lens and v is the distance of image from the eye, which is the correct schematic graph ?**

PYQ – 2024 - I

(a)

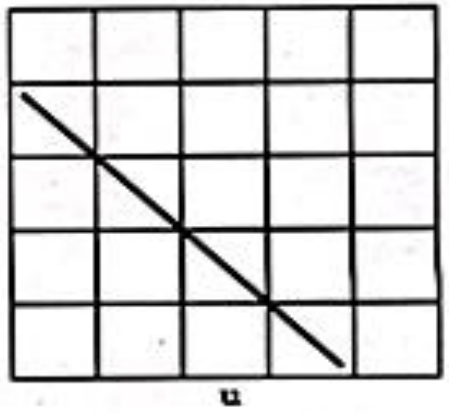



(c)

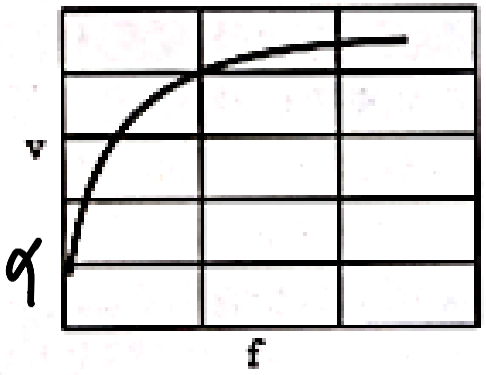



$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$

(b)



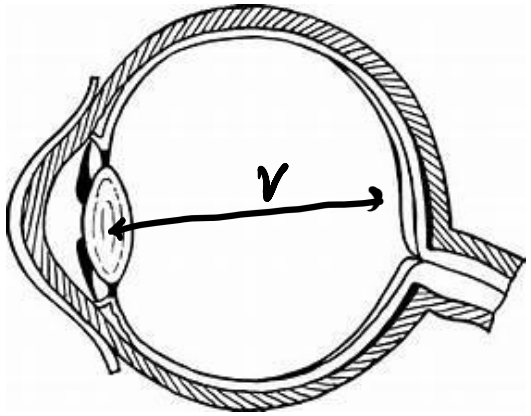

(d)



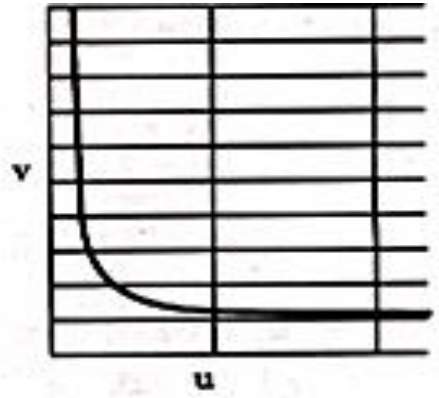

v is always constant, and does not change with u or f.

**For a human eye, where u is the distance of an object from the eye, f is the focal length of the lens and v is the distance of image from the eye, which is the correct schematic graph ?**

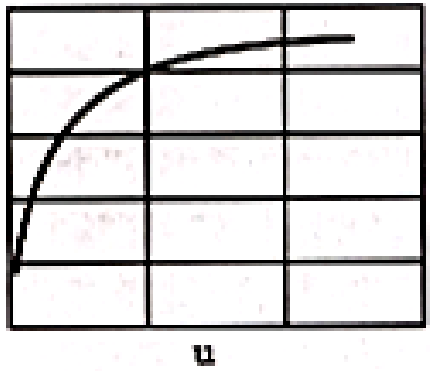
PYQ – 2024 - I



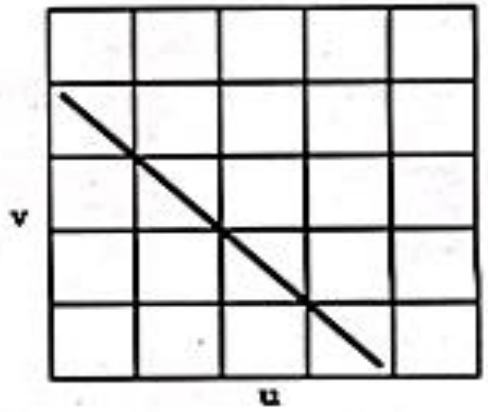

(a)



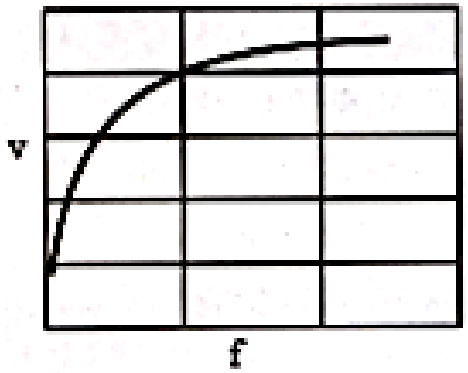

(c)




(b)




(d)




**ANS : C**

Which of the following statements with regard to the phenomenon of the primary rainbow formation by water droplets is/are correct ?

1. It involves refraction and one internal reflection of sunlight. ✓
2. It involves refraction of sunlight only.
3. It is formed as the inner bow. ✓
4. It may involve more than one internal reflection as well as refraction of sunlight.

Select the answer using the code given below :

(a) 1 only

(b) 1 and 3 ✓

(c) 3 and 4 ✗

(d) 2 and 3 ✗

PYQ – 2024 - I

Which of the following statements with regard to the phenomenon of the primary rainbow formation by water droplets is/are correct ?

1. It involves refraction and one internal reflection of sunlight.
2. It involves refraction of sunlight only.
3. It is formed as the inner bow.
4. It may involve more than one internal reflection as well as refraction of sunlight.

Select the answer using the code given below :

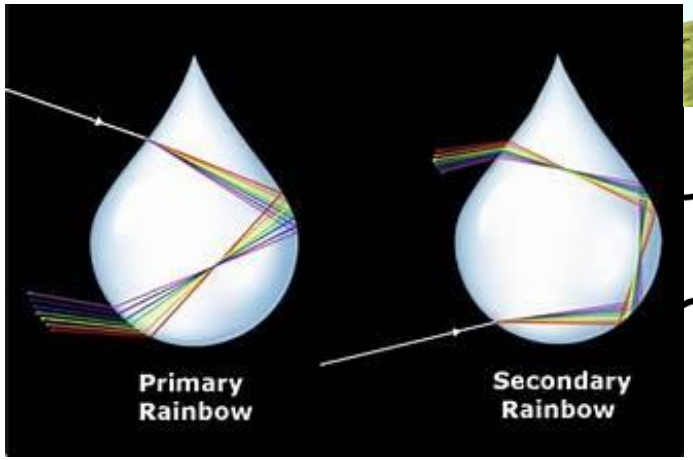
(a) 1 only

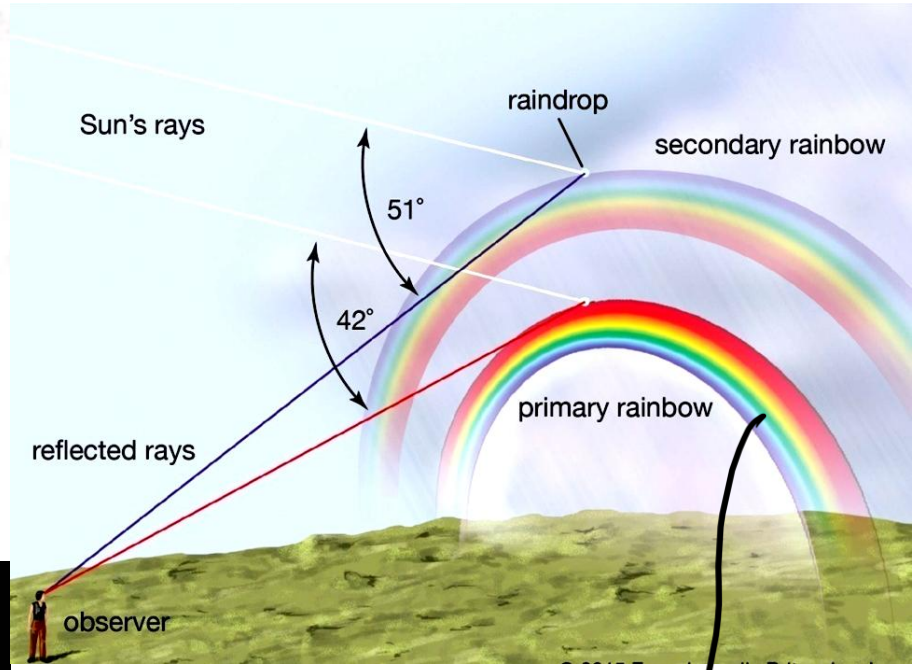
(b) 1 and 3

(c) 3 and 4

(d) 2 and 3

PYQ – 2024 - I




2 times reflection,

inner bow,

ANS : B

# NDA-CDS 1 2025

# GS

LIVE

# PHYSICS

## WAVES & SOUND

# MCQS


NAVJYOTI SIR

SSBCrack EXAMS