SHIKSHA CLASSES

Sub. : Science **Question Paper** **Marks : 30**

Std. : Xth - CBSE **11. Human Eye and The Colourful World** **Time : 1 Hour.**

SECTION (A) **(Each - 1 Mark)**

Q.1 : How eyes adjust in order to focus the image of near or distant objects on retina?

a) The lens moves in or out according to the position of the object

b) The retina moves in or out according to the position of the object

c) The lens becomes thicker or thinner according to the position of the object

d) The pupil gets larger or smaller according to the position of the object.

OR

A man finds it difficult to read the odometer on the dashboard of the car but is able to clearly read a distant road sign. Which of the following statement is correct about this man?

a) The near point of his eyes has receded away.

b) The near point of his eyes has come closer to him.

c) The far point of his eyes has receded away.

d) The far point of his eyes has come closer to him.

Q.2 : Write the name of phenomenon of the star appear shifted from their actual position.

OR

Write the name of phenomenon due to which sky appears blue.

For question number 3 to 5 two statement are given one labeled Assertion (A) and other labeled Reason (R) select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below

a) Both A and R are true and R is correct explanation of the assertion.

b) Both A and R are true but R is not the correct explanation of the assertion.

c) A is true but R is false. d) A is false but R is true.

Q.3 : **Assertion (A) :** Blind spot is a small area of the retina which is insensitive to light where the optic nerve leaves the eye.

Reason (R) : There are no rods or cones present at the junction of optic nerve and retina in the eye.

Q.4: **Assertion(A) :** A rainbow is sometimes seen in the sky in rainy season only when observer's back is towards the Sun.

Reason (R) : Internal reflection in the water droplets cause dispersion and the final rays are in backward direction.

Q.5: **Assertion(A) :** Danger signals are made of red colour.

Reason (R) : Velocity of red light in air is maximum, so signals are visible even in dark.

Q.6 : A person cannot see the distant objects clearly (though he can see the nearby objects clearly). He is suffering from the defect of vision called:

a) Cataract b) Hypermetropia c) Myopia d) Presbyopia

OR

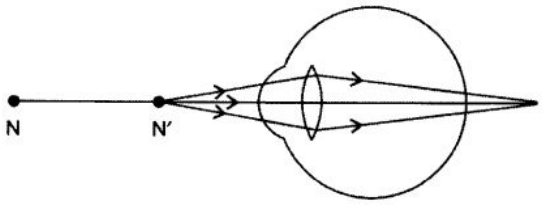
A got his eye tested. The optician's prescription for the spectacles was:

Left eye: – 3 D Right eye: – 3.50 D

The person is having a defect of vision called:

a) Presbyopia b) Myopia c) Astigmatism d) Hypermetropia

Q.7: Study the diagram given below and answer any two questions from 5(i) to 5(iii) (2)



i) Which defect of vision is represented in this case?

a) Myopia b) Hypermeteropia

c) Presbyopia d) Both b & c

ii) ------ is the one of the cause of this defect.

a) As eyeball become smaller b) As eyeball become elongate

c) Lesser focal length d) None of the above

iii) Defect can be corrected using ------

a) Convex lens b) Concave mirror

c) Concave lens d) Convex mirror

Q.8: The danger signals installed at the top of tall buildings are red in colour. These can be easily seen from a distance because among all other colours, the red light

a) is scattered the most by smoke or fog b) is scattered the least by smoke or fog

c) is absorbed the most by smoke or fog d) moves fastest in air

Q.9: Which of the following phenomena of light are involved in the formation of a rainbow?

a) Reflection, refraction and dispersion

b) Refraction, dispersion and total internal reflection

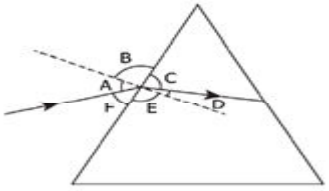
c) Refraction, dispersion and internal reflection

d) Dispersion, scattering and total internal reflection

Q.10: The splitting of white light into different colours on passing through a prism is called

a) reflection b) refraction c) dispersion d) deviation

Q.11: The image shows a light ray incident on a glass prism.



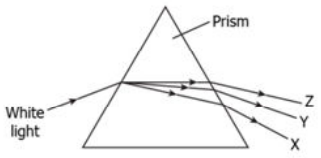
The various angles are labeled in the image. Which angle shows the angle of incidence and angle of refraction, respectively?

a) A and D b) B and E c) C and F d) D and F

Q.12 When white light enters a prism, it gets split into its constituent colours. This is due to

a) different refractive index for different wavelength of each colour
b) each colour has the same velocity in the prism.
c) prism material has high density.
d) Scattering of light

Q.13: The image shows the dispersion of the white light in the prism.



What will be the colours of the X, Y and Z?

a) X: red; Y: green; Z: violet b) X: violet; Y: green; Z: red
c) X: green; Y: violet; Z: red d) X: red; Y: violet; Z: green

Q.14: The bluish colour of water in deep sea is due to

a) The presence of algae and other plants found in water
b) Reflection of sky in water
c) Scattering of light
d) Absorption of light by the sea

SECTION (B) **(Each - 2 Mark)**

Q.15 : Explain why do the planets not twinkle but the stars twinkle.

Q.16 : What is presbyopia ? State the cause of Presbyopia.

OR

Draw a ray diagram to show how myopia defect can be corrected using a lens of appropriate focal length.

SECTION (C) **(Each - 3 Mark)**

Q.17 : Why can't we see clearly when we enter a dim light room from bright sunlight?

OR

Why does sky appear blue? Explain.

Q.18 : Why do we see a rainbow in the sky only after rainfall ?

SECTION (D) **(5 Mark)**

Q.19 : Make a diagram to show how hypermetropia is corrected. The near point ofhypermetropia eye is 1m. What is the power of lens required to correct this defect? Assume that the near point of normal eye is 25cm.

OR

Explain the working of human eye with neat diagram.

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