

PHYSICS

Time : 50 minute

Score :20

General Instructions:

- Consolation time is 10 minutes
- A total of 40 score questions are given. Out of these, the best written 20 score questions / sub-questions will be considered for scoring.
- Not all questions need to be answered. But the maximum number of known answers can be written in a timely manner.
- Write answers that you can write with confidence first.
- Write the number of questions and the number of sub-questions clearly.

Section A (Questions 1 to 4 , Each carries 1 score)

1. Fill up suitably.

Rainbow : Dispersion

Blue colour of the sky :

2. Find the odd and state reason.

Solar energy , Tidal energy , Nuclear energy , Energy from wind

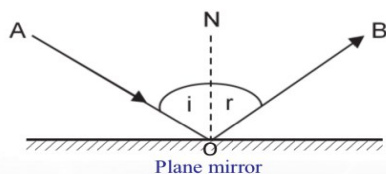
3. Where should we place an object in front of a concave mirror to obtain a magnified erect image?

(At C , At principal focus , Between P and F , Beyond C)

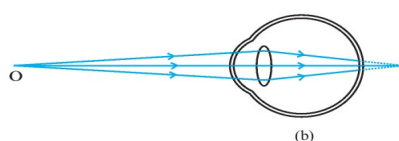
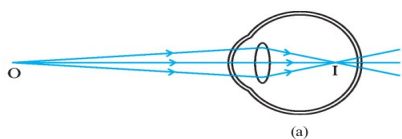
4. Reciprocal of focal length expressed in metres is known as of a lens.

Section B (Questions 5 to 10 , Each carries 2 score)

5. The figure below shows the reflection of a light ray from a plane mirror.



- a. If \overline{ON} is the normal , what does \overline{AO} and r in the figure represent? (1)
 - b. If $\angle AON = 40^\circ$, how much is the angle of reflection? (1)
6. All of you would have seen a rainbow.
- a. What is the colour seen at the upper edge of the rainbow? (1)
 - b. In which shape does the rainbow appear when seen from a flying aeroplane? (1)
7. Select the correct statements from the following related to concave lenses.
- a. Image is formed between F and 2F.
 - b. Image is formed between F and optic centre.
 - c. Image is always diminished ,erect and virtual.
 - d. Image is always enlarged ,real and erect.
8. Correct the following statements by changing the terms underlined.
- a. The mid point of a lens is known as Centre of curvature. (1)
 - b. The distance from the optic centre to the principal focus is the radius of curvature. (1)
9. The figures show the formation of image in the eye. Identify the defect of the eye in each case.



10. LPG is the cooking gas that we get in cylinders for domestic use.
- How will you know if there is leakage in a LPG cylinder? (1)
 - What precautions are to be taken to avoid accidents due to LPG leakage?

Section C (Questions 11 to 14 . Each carries 3 score)

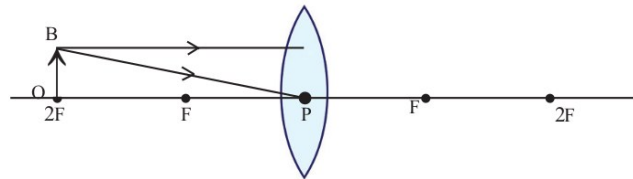
11. Match the following.

A	B	C
Convex mirror	Image formed are enlarged and erect.	For observing the face.
Plane mirror	Image is diminished , virtual and erect.	Shaving mirror.
Concave mirror	Image is virtual , erect and is of the same size as that of the object.	Rear view mirror.

12. Observe the figure. Light falling on two different media are shown.



- Which medium has greater optical density? Why? (2)
 - Which medium has greater refractive index? (1)
13. An object OB is placed at 2F in front of a convex lens.



- Complete the ray diagram . (2)
 - Write any two characteristics of the image formed. (1)
14. Scattering is the change in direction brought out by the irregular and partial reflection of light when it hits the particles of the medium.
- Which component colour in white light undergoes maximum scattering? (1)
 - What is the relation between scattering and the size of the particles? (1)
 - Why red colour has been given to the tail lamps of vehicles? (1)

Section D (Questions 15 to 17 , Each carries 4 score)

15. A ray of light enters from glass to air at a critical angle of 42° .
- What is meant by critical angle? (1)
 - What will happen to the refracted ray if the angle of incidence is 45° . What is this phenomenon known as? (2)
 - Write two practical applications of this phenomenon in our day to day life. (1)
16. Energy crisis is the consequence of increasing demand but decreasing availability.
- Suggest any four methods to reduce energy crisis. (2)
 - What is meant by green energy? Write two examples. (2)
17. An object is placed 10 cm away from a concave mirror of focal length 6 cm.
- $u = \dots\dots\dots$, $f = \dots\dots\dots$ (1)
 - Find out the position of the image. (2)
 - Calculate the magnification.(1)

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STUDENTS' SSLC SELF EVALUATION TOOL

(Tirur Educational District- Headmasters Forum)

Score : 40
Time : 50Min

PHYSICS

B
Series Test II

General instructions

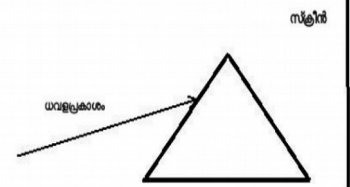
- 10 minutes is the consolation time.
- There are questions with a total score of 40. Out of these, the best written 20 questions / sub-questions will be considered for scoring.
- Not all questions need to be answered. But the maximum number of known answers can be written in a timely manner.
- Write answers that you can write confidently.
- Write the number of questions and the number of sub-questions clearly.

Section A (1 mark for questions 1 to 4)

1. Check the first word pair relationship and complete the second word pair.
Brown energy : Diesel, Green energy :
2. Which is the lowest scattered color in visible light?
3. Refractive indices of some materials are given. Find the medium with highest speed of light
[Glass: 1.52 , water : 1.33 glycerine : 1.47]
4. If the sides of two mirrors are arranged at an angle of 45 degree between them. How many images can be seen ?

Section B (2 mark for questions 5 to 10)

5. Coal is the most abundant fossil fuel a) On which basis coal is classified?
b) Name the products obtained by distilling coal in the absence of air.
6. At sunrise sun seems red in colour.
a) Which is the phenomenon causing this effect? (1) b) Explain.(1)
7. Optical fibre works with the principle of total internal reflection. a) What is total internal reflection? b) Write two areas that utilize optical fiber.
8. See the partially drawn diagram of white light passing through a prism. Complete the diagram and mark the colors
9. The magnification of the image formed by a convex lens is -2.
a) What does the negative sign of magnification indicate? (1)
b) If the height of the object is 10 cm, calculate the height of the image.(1)
10. a) Which mirror is used as rear view mirror?
b) Write down the two characteristics of the image formed by in this mirror.



Section C (3 mark for questions 11 to 14)

11. LPG is a fuel used for domestic purposes.

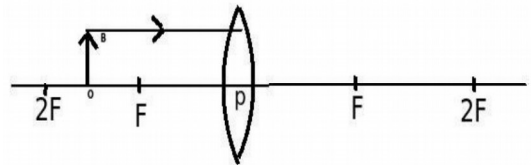
- a) What is the main component of LPG? (1)
- b) Write down two safety measures that should be taken immediately on LPG leak. (2)

12. Match the following

The image remains for 1/16 s. in retina.	scattering	Forms rainbow
composite light splits into component colors	Persistence of vision	The sunlight reaches classrooms
Irregular reflection of light.	Dispersion	Newton's disc appears white when rotates

13. Object OB is placed in the principal axis between F and 2F

- a) Which lens is seen in the diagram? (1)
- b) Complete the image and locate the image.(2)



14. Find out which type of lens is suitable for the following statements.

- a) The main focus is virtual since it cannot converge the incident rays (1)
- b) Concentrates light rays coming from infinity to a point. (1)
- c) The object appears larger when placed between the main focus and the optical center(1)

Section D(4 mark for questions 15to 17)

15. When an object is placed at the center of curvature of a concave mirror, the real image is obtained at the center of curvature itself.

- a) Write down any two features of the image. (2)
- b) What is the magnification? (1)
- c) What is meant by magnification ? (1)

16. Saving energy is same as producing energy.

- a) What is meant by energy crisis? (1)
- b) Write two reasons for the energy crisis. (1)
- c) Write four ways to solve the energy crisis. (2)

17. You may be familiar with new Cartesian sign convention. Write the measurements in the diagram using Cartesian sign convention

1. u =
2. v =
3. Height of object(OB) =
4. Height of image (iM) =

