

**GREENLAWNS HIGH SCHOOL**  
**TERMINAL EXAMINATION 2021**

**SUBJECT: PHYSICS**

**STD. 10**

**TIME: 1 HOUR**

**MARKS: 40**

**Note:** All answers to this paper must be written on composition sheet. **This question paper has three pages.**

Reading time: 8.20 a.m. to 8.30 a.m.

Writing time: 8.30 a.m. to 9.30 a.m.

Paper uploading time: 9.30 a.m. to 9.40 a.m.

Write your **Name, Roll No., Class-Div.** and **Page number** on the righthand side top corner of every side of your composition sheet.

After you finish your paper, click a clear photo of each page of your answer sheet, convert it into a single PDF and rename it as Roll No. Name and Class-Div. Physics and upload it on teams.

**QUESTION 1**

- A] i) Name the radiations which are absorbed by glass but pass through quartz. (1)
- ii) How do these radiations affect human beings? (1)
- iii) Give one use of the radiations mentioned by you in (i) (1)
- B] Can a machine be used as a force multiplier as well as a speed multiplier simultaneously? Justify your answer. (3)
- C] i) Explain: An optical fibre is used to transmit a light signal over a long distance. (2)
- ii) Write the relation between the refractive index of two media when they are interchanged. (1)
- iii) State the principle of an ideal machine. (1)

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**QUESTION 2**

- A] Write the energy conversion in each of the following cases when they are in working condition. (3)
- i) Electric generator
  - ii) Kerosene lamp
  - iii) Microphone
- B] When the body is said to be in equilibrium? (3)
- Name two kinds of equilibrium.
- C] i) Define: Critical angle (4)
- ii) Write its relationship with refractive index for a given a given pair of media.
  - iii) The critical angle for glass – air is  $45^\circ$  for the light of yellow colour. State whether it will be less than, equal to, or more than  $45^\circ$  for a) blue light b) red light

**QUESTION 3**

- A] i) Define the power of a lens. (3)
- ii) In what unit it is expressed?
  - iii) Which lens deviates the light more, a thick lens or a thin lens?
- B] i) Which pulley will you prefer, a single fixed pulley or a (3) single movable pulley? Why?
- ii) Suggest a way by which you can use a pulley selected by you more effectively.

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- C] i) Distinguish between natural vibrations and damped vibrations. (Give one point) (4)  
ii) Resonance is the effect of which type of vibrations?  
iii) Give two conditions for resonance to occur.

QUESTION 4

- A] Give scientific reasons: (3)  
i) Infrared radiations are used as signals during war.  
ii) The efficiency of an ideal machine is 100%  
iii) In case of prism the emergent ray is not parallel to the incident ray.
- B] A boy stands 61.5 m in front of a tall wall and claps. (3)  
The boy continues to clap, every time an echo is heard.  
Another boy finds that the time taken between the first and fifty-first clap is 18 sec. Calculate the speed of sound.
- C] An object is placed at the following distances from a convex lens of focal length 15 cm, turn by turn: (4)  
i) 35 cm ii) 8.5 cm iii) 18 cm iv) 30 cm  
Which position of the object from above will produce  
1 – real, inverted image of the same size as the object  
2 – real, inverted and magnified image  
3 – virtual, upright and magnified image  
4 – real, inverted and diminished image?

**BEST OF LUCK**