**AGA KHAN UNIVERSITY EXAMINATION BOARD**

**SECONDARY SCHOOL CERTIFICATE**

**CLASS X**

**MODEL EXAMINATION PAPER 2023 AND ONWARDS**

**Physics Paper II**

**Time: 1 hour 50 minutes Marks: 25**



**INSTRUCTIONS**

**Please read the following instructions carefully**.

1. Check your name and school information. Sign if it is accurate.

| **I agree that this is my name and school.**<br>**Candidate's Signature** |
|---|
| |

**RUBRIC**

2. There are SEVEN questions. Answer ALL questions. Questions 6 & 7 each offer TWO choices. Attempt any ONE choice from each.

3. When answering the questions:

   Read each question carefully.
   Use a black pointer to write your answers.
   Use a black pencil for diagrams. DO NOT use coloured pencils.
   DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
   Complete your answer in the allocated space only. DO NOT write outside the answer box.

4. The marks for the questions are shown in brackets ( ).

5. You may use a simple calculator if you wish.

Q.1.

Write any THREE uses of total internal reflection in light propagation. (Total 3 Marks)

1. _____

2. _____

3. _____

Q.2. (Total 3 Marks)

a. Name and define the principle of a transformer on which it works. (2 Marks)

_____

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b. Write ONE use of a transformer. (1 Mark)

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Q.3. (Total 2 Marks)

The picture that appears on the screen of a television, that uses cathode rays tube, becomes distorted when a powerful magnet is brought near the screen.

Explain the given phenomena.

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Q.4. (Total 2 Marks)

Mention any TWO benefits of transmitting information and data through an optical fibre.

Q.5. (Total 3 Marks)

A nuclear fusion reaction is very difficult to achieve as compared to the nuclear fission reaction. Justify the given statement in any THREE points.

Q.6.

(Total 6 Marks)

**EITHER**

a. A simple pendulum is attached with 4 m long string.

i. Find the time period of the simple pendulum if it is placed in an elevator moving upwards with an acceleration of 8 $m/s^2$. (3 Marks)

ii. If the elevator is moving downwards with an acceleration of 8 $m/s^2$, then what will be its time period? (3 Marks)

(**Note**: The value of acceleration due to gravity 'g' is 9.8 $m/s^2$.)

**OR**

b. Ali produces a sound in a big empty hall. He hears a recurring sound resembling to his original sound.

i. Name and define the phenomenon of the sound wave that Ali observed. (2 Marks)

ii. Explain how it is produced in FOUR points. (4 Marks)

Q.7. (Total 6 Marks)

**EITHER**

a.

i. Why large electrostatic charges can be dangerous? Give TWO examples of it from daily life.

(3 Marks)

ii. Long vehicles carrying inflammable materials usually have a metallic chain touching the ground during motion. Explain this statement using the phenomenon of electrostatic charges and friction. (3 Marks)

**OR**

b. Explain how the resistance of a metallic conductor rises with an increase in temperature.

Given FIVE points to support your answer. (6 Marks)



END OF PAPER

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