

**AGA KHAN UNIVERSITY EXAMINATION BOARD**  
**SECONDARY SCHOOL CERTIFICATE**  
**CLASS IX**  
**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.

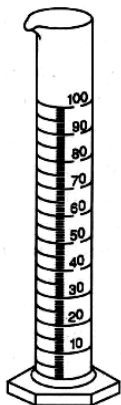
**I agree that this is my name and school.**  
**Candidate's Signature**

**RUBRIC**

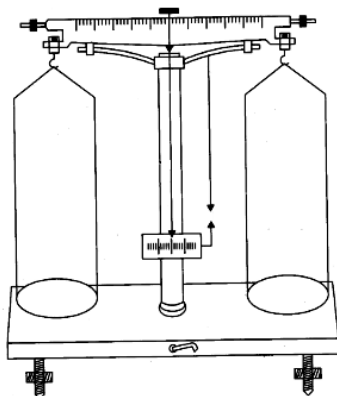
2. There are SEVEN questions. Answer ALL questions. Questions 6 & 7 each offer TWO choices. Attempt any ONE choice from each.
3. When answering the questions:  
  
Read each question carefully.  
Use a black pointer to write your answers. DO NOT write your answers in pencil.  
Use a black pencil for 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. (Total 2 Marks)

Write the name of the physical quantity which is measured by the given instruments.



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II

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II \_\_\_\_\_

Q.2. (Total 3 Marks)

There are three states of equilibrium.

Write any ONE example of each state of equilibrium from daily life.

S. No.	States of Equilibrium	Examples
1	Stable	
2	Unstable	
3	Neutral	

Q.3.

(Total 2 Marks)

The masses of the Earth and the Moon are  $5.98 \times 10^{24}$  kg and  $7.35 \times 10^{22}$  kg respectively.

- The distance between the Earth and the Moon is  $3.84 \times 10^8$  m.
- The value of gravitational constant is  $6.67 \times 10^{-11}$  Nm<sup>2</sup>/kg<sup>2</sup>.

With reference to the given information, calculate the gravitational force exerted by the Earth on the Moon.

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Q.4.

(Total 3 Marks)

The temperature of a metal rim is increased before fixing it to a wooden cartwheel.

Give a scientific reason to support this statement.

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Q.5. (Total 3 Marks)

- a. An animal fur coat is made in such a way that the inner surface of the material is the animal's skin and the outer surface is fur/ hair.

State the reason, why the coat is warmer if it is worn inside out (i.e. the inner surface becomes the outer)? (1 Mark)

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- b. Walking barefoot on a carpet feels warmer than walking on tiles. Give a scientific reason to support this statement. (2 Marks)

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Q.6.

(Total 6 Marks)

**EITHER**

- a. A sports car starts from rest. It covers a distance of 900 m to attain a speed of 80 m/s. Determine the acceleration of the car and the time required to reach this speed. (6 Marks)

**OR**

- b. Two vehicles, a sports bike and a car of masses 325 kg and 1754 kg respectively, are moving with different velocities.
- i. Find the momentum of the sports bike at the speed of 140 km/h. (3 Marks)
- ii. Find the velocity of the car if momentum of both the vehicles is same. (3 Marks)

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Q.7. (Total 6 Marks)

## EITHER

- a. Describe renewable and non-renewable sources of energy and give any FOUR examples of each source. (6 Marks)

**OR**

- b.
- i. Describe the types of forces that act on a body in a fluid, if it is
    - I. partially immersed.
    - II. completely immersed. (4 Marks)
  - ii. Explain the reason, why upthrust acts in the upward direction. (2 Marks)

END OF PAPER

Please use this page for rough work

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