AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS IX EXAMINATION

APRIL/ MAY 2019

Physics Paper II

Time: 2 hours 15 minutes Marks: 35

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 TEN questions. Answer ALL questions. Questions 9 & 10 each offer TWO choices. Attempt any ONE choice from each.

3. When answering the questions:

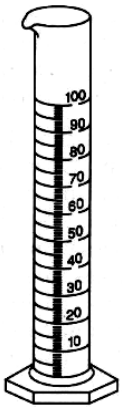
   Read each question carefully.
   Use a black pointer to write your answers. DO NOT write your answers in pencil.
   Use a black pencil for diagrams. DO NOT use coloured pencils.
   DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
   Complete your answer in the allocated space only.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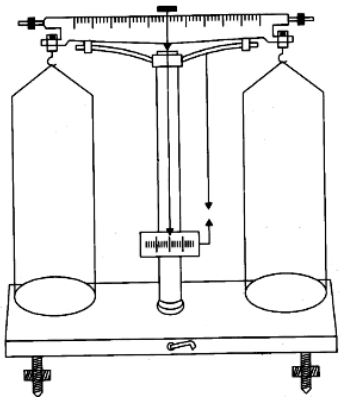

II

I_____

II_____

Q.2. (Total 3 Marks)

Differentiate between speed and velocity in any THREE points.

S. No.	Speed	Velocity
1		
2		
3		

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Q.3. (Total 3 Marks)

What happens when a very heavy ball collides head on with a light stationary ball on a flat surface?

Describe your answer on the basis of law of conservation of momentum.

Q.4. (Total 2 Marks)

There are three states of equilibrium.

Write any ONE example of any two states of equilibrium from daily life. For each example, mention clearly which state of equilibrium is involved.

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Q.5. (Total 3 Marks)

Consider the mass of the Earth and the Moon are 5.98×10^{24} kg and 7.35×10^{22} kg respectively.

The distance between the Earth and the Moon is 3.84×10^{5} km.

The value of gravitational constant is 6.67×10^{-11} Nm^2/kg^2.

Calculate the gravitational force exerted by the Earth on the Moon.

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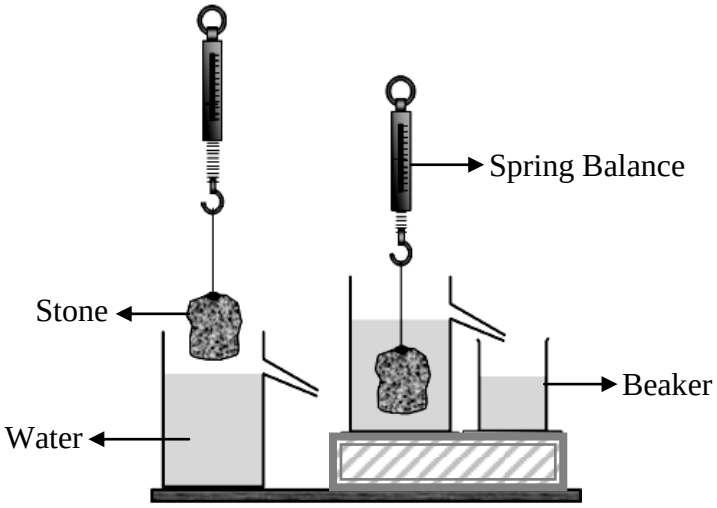
Q.6. (Total 4 Marks)

What are the FOUR necessary steps to find the density of a stone with the help of the given apparatus?



Q.7. (Total 4 Marks)

a. Define thermal expansion of solids. (1 Mark)

_____

_____

b. The temperature of a metal rim is increased before fixing it to a wooden cart wheel. Give a scientific reason to support this statement. (3 Marks)

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Q.8. (Total 4 Marks)

a. An animal fur coat is made in such a way that the inner surface is animal's skin and the outer surface is fur/ hair. (2 Marks)

Why is this coat warmer if it is worn inside out (i.e. the inner surface becomes the outer)?

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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.9. (Total 5 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. (5 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. Hence, find the velocity of the car if momentum of both the vehicles is same. (2 Marks)

Q.10. (Total 5 Marks)

EITHER

a. Explain renewable and non-renewable sources of energy and give any THREE examples of each source. (5 Marks)

OR

b.

i. Which types of forces act on a body in a fluid, if it is

I. partially immersed.

II. completely immersed. (4 Marks)

ii. Why this upthrust acts in the upward direction? (1 Mark)

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