

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X

ANNUAL EXAMINATIONS (THEORY) 2024

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:

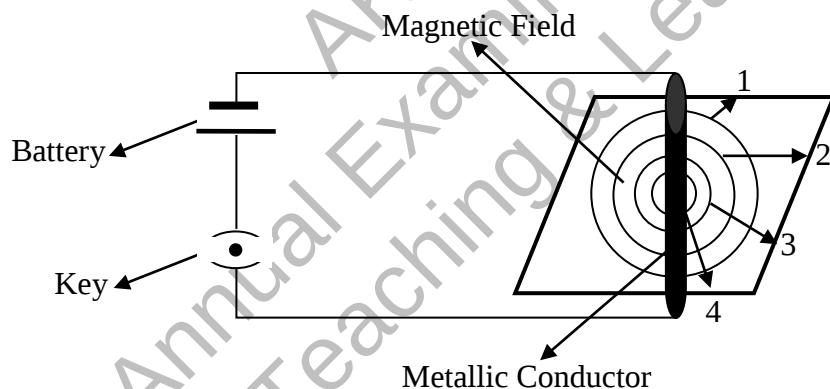
Read each question carefully.
Use a black pointer to write your answers. DO NOT write your answers in pencil.
Use a black pencil for diagrams. DO NOT use coloured pencils.
DO NOT use staples, paper clips, glue correcting fluid, or ink erasers.
Complete your answer in the allocated space only. DO NOT 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 3 Marks)

A bus has a rear-view mirror which is convex with 5 m radius of curvature. If a car is located at 10 m from the mirror, then find the image distance of the car in the mirror.

Q.2. (Total 3 Marks)

The given diagram shows an electric current passes through a metallic conductor and produces magnetic field around it.



- Label the direction of the electric current in the diagram.
- Label the direction of the magnetic field in the diagram.
- Identify the number (1/2/3/4) of magnetic field line that has maximum intensity.

Q.3.

(Total 2 Marks)

Give any TWO reasons why electron gun was used in televisions and computer monitors.

Q.4.

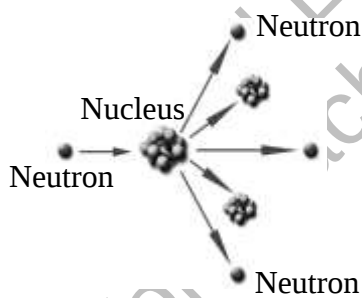
(Total 2 Marks)

State any TWO components of information technology.

Q.5.

(Total 3 Marks)

The given diagram shows a nuclear reaction.



i. Name the reaction shown in the diagram.

ii. How can we get energy from the given process?

iii. What is the role of neutrons in the given process?

PLEASE TURN OVER THE PAGE

Q.6.

(Total 6 Marks)

EITHER

- a. With the help of a ripple tank, describe any TWO properties of waves. (4 Marks)
- Support your answer by drawing a ray diagram for any TWO properties. (2 Marks)

OR

- b.
- i. Write the intensity of faintest audible sound wave. (1 Mark)
- ii. Write the audible frequency range of sound wave. (1 Mark)
- iii. Describe the production mechanism of sound waves in the air. (4 Marks)

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Q.7.

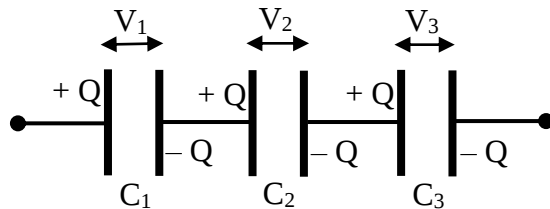
(Total 6 Marks)

EITHER

a.

- i. Identify the combination of capacitors in the given diagram.

(1 Mark)



- ii. Derive an expression for the effective capacitance of the combination identified in part i.

(5 Marks)

OR

- b. In an electric circuit, $3\ \Omega$ and $5\ \Omega$ resistors are connected in parallel combination across a source of 12 V .

Calculate the electrical power of the circuit.

(6 Marks)

END OF PAPER

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