



TECHNICAL UNIVERSITY OF MOMBASA
FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF MATHEMATICS & PHYSICS

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN APPLIED SCIENCES

(DAC 17S, DSLT 17S, DFQA 17S)

APS 2101: PHYSICS I

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Sep 2018

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of 5 questions. Attempt Question 1 and any other two.

Do not write on the question paper.

Question ONE

- i) Tabulate at least five (5) difference between mass and weight (5mrks)
- ii) Briefly explain the following four (4) examples of each:
- a) Vector Quantity (6marks)
 - b) Scalar Quantity (6 marks)
- iii) Give at least five (5) examples and their SI Unit for each of the following physical quantities
- a) Derived physical quantities (5 marks)
 - b) Non derived physical Quantities (5 marks)
- iv) A cuboid of length 5cm, width 2cm and height of 7cm is filled with a liquid of density 1050kg/m³. Determine;
- a) The maximum pressure exerted by the liquid in the container. (2marks)
 - b) The minimum pressure exerted by the liquid in the container. (2 marks)

Question TWO

- a) State the following
- i) Newton first law of motion (2 marks)

- ii) Newton second law of motion (2 marks)
- iii) Newton third law of motion (2 marks)
- b) Explain the following types of forces
 - i) Frictional force (2 marks)
 - ii) Surface tension force (2 marks)
 - iii) Electrical force (2 marks)
- c) Briefly state the importance of each of the following above types of forces. (5 marks)

Question THREE

- a) State at least five (5) electrical quantities and state the S.I units for each. (10 marks)
- b) Briefly explain five (5) importance of force in real life. (5 marks)

Question FOUR

- a) Define momentum and state its S.I unit. (2 marks)
- b) Explain the following
 - i) Elastic collision (2 marks)
 - ii) Inelastic collision (2 marks)
- c) Define the following terms
 - i) Elasticity (2 marks)
 - ii) Viscosity (2 marks)
- d) Explain why the meniscus of water is curved upwards and that of mercury is curved downwards. (5 marks)

Question FIVE

State the values of the following resistors and determine their maximum and minimum values

- i) Orange yellow green gold (3 marks)
- ii) Blue black violet (3 marks)
- iii) Violet yellow blue red (3 marks)
- iv) Blue black yellow gold (3 marks)
- v) Red Red Green Silver (3 marks)