



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY (JOOUST)
SCHOOL OF EDUCATION, HUMANITIES AND SOCIAL SCIENCES (SEHSS)
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION (SCIENCE
AND SPECIAL NEEDS)
3RD YEAR 1ST SEMESTER 2022/2023 ACADEMIC YEAR EXAMS
MAIN CAMPUS

COURSE CODE: ECB 2333

COURSE TITLE: SPECIAL METHODS OF TEACHING PHYSICS
EXAM VENUE:

DATE: 21/12/2022

EXAM SESSION: 15.00-17.00PM

TIME: 2 HOURS

INSTRUCTIONS

1. Answer Question **ONE** (COMPULSORY) and **ANY** other **TWO** questions.
2. Candidates are advised not to write on the question paper.
- 3.
4. Candidates must hand in their answer booklets to the invigilator while in the examination room.

QUESTION ONE

- (a) Explain the physics concept behind tight covering of the pot while boiling green maize cobs
(4 marks)
- (b) How do specific objectives of a topic in physics support the achievement of general objective of physics course? Give example
(4 marks)
- (c) Describe a teaching strategy you would apply to teach pressure in liquids
(3 marks)
- (d) What does physics education research refer to
(2 marks)
- (e) Explain any three laboratory rules that guide the teaching/learning of physics
(6 marks)
- (f) (i) List the resource materials you would use to teach the concept of Archimedes Principle
(2 marks)
- (ii) Explain the work of any two of the materials listed in (i) above
(4 marks)
- (g) (i) A uniform beam AB of mass 16kg and length 10m rests horizontally on two supports C and D where AC = 2m and DB is 4m. Particles of masses 8kg and 10kg are placed at the ends A and B respectively. Find the reactions, R_1 and R_2 at the supports C and D respectively
(2 marks).
- (ii) Award three marks for the working and correct answer
(3 marks)

QUESTION TWO

- (a) Prepare a one-week scheme of work on the topic heat transfer
(16 marks)
- (b) Assume the topic has been taught, fill the remarks column
(4 marks)

QUESTION THREE

- (a) Give four reasons why it is important to prepare a physics lesson plan
(4 marks)
- (b) Prepare a 40-minute lesson plan on the sub-topic "Image formation by a convex lens"
(16 marks)

QUESTION FOUR

By giving examples, explain any five areas where the knowledge of physics support courses that require the understanding of biology as a subject
(20 marks)

QUESTION FIVE

Explain any **ten** functions of a physics laboratory technician
(20 marks)