



MACHAKOS UNIVERSITY

University Examinations 2019/2020 Academic year

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATION COMMUNICATION TECHNOLOGY

.....YEAR SEMESTER EXAMINATION FOR

DOCTOR OF PHILOSOPHY IN EDUCATIONAL ADMINISTRATION

ECT 920: ADVANCED INSTRUCTIONAL METHODS IN PHYSICS.

DATE:

TIME:

INSTRUCTIONS

ANSWER QUESTION ONE AND ANY TWO OTHERS.

QUESTION ONE (30 MARKS)

- a) Critically explain four strategies of meaningful learner Engagement and how they relate to the theory of multiple intelligence. (12 marks)
- b) Illustrate with concrete steps ways in which the phases of a learning cycle can be applied to a named Practical Activity in Physics. (9 marks)
- c) Demonstrate three ways in which the Experiment method differs from Simulation/ Gaming. (9 marks)

QUESTION TWO (15 MARKS)

Discuss five ways in which the project method differs from field investigation.

QUESTION THREE (15 MARKS)

Some Scientists have proposed that the goal of science is to: generate the most powerful research programme (Iakatosianism); appreciate the historical reality and change our view of nature (Kuhnneanism); generate solutions to human problems. (Pragmatism); contribute to technological development (modernism).

Discuss your position on these views for the teaching of Physics.

QUESTION FOUR (15 MARKS)

Evaluate and illustrate three ways in which ICT may enhance the teaching of Physics.

QUESTION FIVE (15 MARKS)

How useful is the Vee-diagram as a tool for planning for a practical assessment? Discuss this with reference to a named topic in Physics?