



MACHAKOS UNIVERSITY

University Examinations 2019/2020

SCHOOL OF EDUCATION

DEPARTMENT OF COMMUNICATION TECHNOLOGY

THIRD YEAR SECEOND SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION (SPECIAL NEEDS)

BACHELOR OF EDUCATION (SCIENCE)

BACHELOR OF EDUCATION (ARTS)

ECT 306: TEACHING METHODS- PHYSICS

DATE: 17/11/2020

TIME: 8:30 – 10:30 AM

INSTRUCTIONS: Answer Question One and Any Other Two

QUESTION ONE (COMPULSORY)(30MARKS)

- a) The teaching and learning of physics should lead to the production of scientists for the good of the nation. Explain the extent to which this has been achieved in Kenya. (4 marks)
- b) Give three **advantages** of objective testing. (3 marks)
- c) **Explain any two** emerging issues that have been incorporated in the revised physics syllabus. (4 marks)
- d) State two reasons why a physics teacher should maintain a good record of work (2 marks)
- e) State five safety measures to be observed in a laboratory? (5 marks)
- f) Explain one advantages of the demonstration method of teaching physics. (2 marks)
- g) The following is an extract from a possible scheme of work for week 9 of Form one syllabus. From this scheme of work, generate a lesson plan for a 40(forty) minute lesson. (10 marks)

week	lesson	Topic	Sub-Topic	Objective	Class activities	Resources	References
9	1-2	Forces	Mass and weight	By the end of the lesson, the learner should be able to: State and explain the relationship between mass and weight Define scalar and vector magnitude	Demonstrations Discussions Problems solving on mass and weight	Beam balance Spring balance Sponge Store Polythene	Comprehensive secondary physics Students Book 1 page 17-22 Teacher's Book 1 pages 6-10 Secondary Physics students Book1 (KLB) pages 72-75 Golden tips physics pages 7 Principles of Physics (M. Nelkon) pages 40
	3-4	Forces	Measuring Force	By the end of the lesson, the learner should be able to: Measure weight using spring balance Solve numerical problems on numerical forces	Discussions Experiments	Spring balance Chart on vectors and scalars	Comprehensive secondary physics Students Book 1 page 17-18 Teacher's Book 1 pages 17-15

QUESTION TWO (20MARKS)

- Explain 3 reasons that led to the change of physics curriculum. (6 marks)
- Explain 2 main reasons to why a physics teacher must prepare a scheme of work (4 marks)
- Explain **any three** teaching approaches to the teaching and learning of physics (6 marks)
- Identify any 4(four) methods used to teach physics (4 marks)

QUESTION THREE (20 MARKS)

- List 3 factors to consider when choosing a physics teaching method (3 marks)
- Describe 4 incidences when teacher demonstration is necessary in physics class. (4 marks)
- Explain 4 characteristics of a good physics project (8 marks)

- d) Highlight 5 key factors to consider before writing schemes of work. (5 marks)

QUESTION FOUR (20 MARKS)

- a) Explain the difference between lesson plan and scheme of work (2 marks)
- b) Give 4 reasons for preparing schemes of work and lesson plan. (4 marks)
- c) List 3 phases of learning. (3 marks)
- d) Explain the steps used by a physics teacher when teaching through Project Method? (6 marks)
- e) Give 5 disadvantages why lecture method is discouraged in teaching physics. (5 marks)

QUESTION FIVE (20 MARKS)

- a) Explain how the study of science differs from the other subject. (2 marks)
- b) Differentiate between the static and dynamic view in defining physics. (2 marks)
- c) Explain the four themes of science. (8 marks)
- d) Explain four ways by which science is seen as a way thinking. (4 marks)
- e) Explain four ways by which science is seen as a body of knowledge. (4 marks)