



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF EDUCATION
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION
(ARTS/SCIENCE)
3RD YEAR 1ST SEMESTER 2018/2019 ACADEMIC YEAR
REGULAR PROGRAMME
MAIN CAMPUS

COURSE CODE: ECT 311

COURSE TITLE: SPECIAL METHODS OF TEACHING MATHEMATICS

EXAM VENUE:

STREAM: B. ED. (SCIENCE)

DATE:

EXAM SESSION:

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. Candidates must hand in their answer booklets to the invigilator while in the examination room.

QUESTION ONE

- (a) i) Explain the purpose of summative evaluation in mathematics (4 marks)
ii) Solve the following quadratic equation by the method of completing the square.
 $2x^2 + 12x - 18 = 0$ (2 marks)
iii) Provide a 4-marks marking scheme for the question in ii) above (4 marks)
- (b) Identify any three importance of introduction of a lesson and demonstrate how you can introduce a mathematics lesson effectively (10 marks)
- (c) Explain any four curriculum materials a teacher needs to effective plan her lessons. (4 marks)
- (d) Define a lesson plan and justify any three factors teachers need to consider when writing a lesson plan to be used in the teaching and learning of Mathematics. (6 marks)

QUESTION TWO

- a) Compare and contrast Piaget's knowledge construction with Vygotsky's knowledge construction. (10 marks)
- b) Explain the Common Assumptions about Mathematics Education as was challenged by research findings. (10 marks)

QUESTION THREE

Chose one topic from Secondary school mathematics syllabus and:

- a). Plan a one-week mathematics schemes of work (10 marks)
b). Plan a 40 minute lesson plan from one lesson on the schemes of work (10 marks)

QUESTION FOUR

- a) Compare Lesson Study with Learning study approaches to teaching and learning mathematics (10 marks)
- b) Explain the difference between instrumental and relational understanding of mathematics as explained by SKEMP. (10 marks)

QUESTION FIVE

Describe Robert Gagne's Nine Events of Instruction and show how you can adopt to teach any selected topic in secondary school Mathematics (20 marks)