



**KENYATTA UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2017/2018**  
**FIRST SEMESTER EXAMINATION FOR THE DIPLOMA IN EDUCATION**  
**ECT 153: MATHEMATICS EDUCATION**

**DATE:** Tuesday 6<sup>th</sup> February 2018

**TIME:** 11.00a.m -1.00p.m

**INSTRUCTIONS:**

Answer questions **ONE** and **TWO** and any other **ONE** question

**QUESTION ONE (COMPULSORY)**

A class eight teacher set the following question "Tap A can fill a tank in 3 hours and tap B can separately fill the same tank in 6 hours. if another tap C can empty the tank in 4 hours, if all the taps were put on at 9.30 a.m., at what time would the tank be  $\frac{3}{4}$  full?"

- (a) Solve the problem (12 marks)
- (b) Highlight difficulties an average class eight would have in solving the problem (13 marks)

**QUESTION TWO (COMPULSORY)**

The topic "Time and speed" for standard seven has the following objectives. By the end of the topic, the learner should be able to

- (i) Work out problems involving time
- (ii) Work out problems involving air flight, bus and train tables
- (iii) Convert speed from kilometers per hour to meters per second and vice versa
- (a) Prepare a six lesson schemes of work for teaching the topic to standard seven pupils (15 marks)
- (b) Prepare a 35 minute lesson plan for teaching one of the lesson topics from the schemes of work prepared in 9 (a) above (10 marks)

### **QUESTION THREE**

The third general objectives of teaching Mathematics at primary school level in Kenya is to "Develop skills in measurement, approximations and estimation". Explain with examples how the achievement of this objective would be beneficial to a class eight dropout. (20 marks)

### **QUESTION FOUR**

Compare and contrast the work of Jean Piaget and Jerome Bruner as they apply to the teaching and learning of Mathematics? (20 marks)

### **QUESTION FIVE**

The Kenya school curriculum has been changed several times since independence. Discuss any two reasons that necessitated the changes especially in the mathematics syllabus (20 marks)