

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

#  **UNIVERSITY EXAMINATIONS 2015/2016**

**FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOTECHNOLOGY AND MICROBIOLOGY**

**SBT 2431 : GENETIC ENGINEERING**

**DATE: AUGUST 2014 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE [COMPULSORY] AND ANY OTHER TWO QUESTIONS**

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**QUESTION ONE [30 MARKS][COMPULSORY]**

1. Define the following terms;
2. Transposition [2 marks]
3. Selectable marker [2 marks]
4. Gene sequencing [2 marks]
5. Distinguish between
6. General and site specific recombination [3 marks]
7. Molecular and somatic hybridization [3 marks]
8. Briefly explain types of vectors used in recombinant DNA technology [6 marks]
9. Briefly describe phage transformation process [6 marks]
10. What are restriction enzymes? Give example. [3 marks]
11. Name any three next generation sequencing platforms. [3 marks]

**QUESTION TWO [20 MARKS]**

Discuss the process of producing human insulin using recombinant DNA

technology .

**QUESTION THREE [20 MARKS]**

Discuss the applications of genetic engineering .

**QUESTION FOUR [20 MARKS]**

Discuss risks and hazards associated with genetic engineering.