



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

INSTITUTIONAL BASED PROGRAMME (IBP) AUGUST 2010 SESSION

EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN
PLANT BREEDING

KST 532: BIOTECHNOLOGY AND MOLECULAR BIOLOGY

DATE: Tuesday, 28th December, 2010

TIME: 2.00 p.m. – 5.00 p.m.

INSTRUCTIONS:

ANSWER ANY FOUR QUESTIONS; 25 MARKS EACH

1. Discuss the roles of biotechnology in addressing the challenges of increasing world population and climatic change.
2. Write short notes on: **(each 5 marks)**
 - (i) Protoplast fusion
 - (ii) Micropropagation
 - (iii) Doubled haploids
 - (iv) Mutagenising agents
 - (v) Models of DNA synthesis
3. Write an essay on mutations and their impacts on crop production.
4. Discuss genetic transformation using *Agrobacterium tumefaciens* and biolistic techniques.
5. Discuss the process of protein synthesis, showing how genes are expressed.

=====