



W1-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS 2023/2024

EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN
MOLECULAR MEDICINE

TIM 3103: IMMUNOLOGICAL TECHNIQUES I

DATE: DECEMBER 2023

TIME: 3 HOURS

INSTRUCTIONS:

Answer any Four Questions

1. Muruatetu was given a piece of liver infiltrated with lymphoma and was asked to confirm the identity of the infiltrating lymphoma. Describe how he would accomplish the task using immunohistochemical techniques (25 marks)
2. Discuss the application of the following animal model in science.
 - (a) Poultry (9 marks)
 - (b) Rats (8 marks)
 - (c) Pig (8 marks)
3. Lukishe is interested in confirming the levels of phosphorylated ERK1/2 protein in HeLa cells treated with a herbal product. Describe how he would go about this process from the point of harvesting his treated cells (25 marks)
4. Antje has discovered a new compound that has an immune boosting activity. Having been given peripheral blood from study participants who have taken this novel compound and placebo, can you describe how she can go about demonstrating the effect on the compound on the frequency of CD4 and CD8 cells using flow cytometer (25 marks)
5. Pouline is investigating the effect of agrochemicals on DNA damage using gamma-H2AX as a protein marker for DNA damage response. She is already having treated BJ cells, a primary antibody against gamma-H2AX and other reagents to undertake immunocytological tests. Describe how she will go about processing the cells for microscopy (25 marks)
6. Describe;
 - (a) The three broad categories of cell types and their characteristics (9 marks)
 - (b) The relevance of FBS in cell culture media (6 marks)
 - (c) Practical must dos in a cell culture laboratory (10 marks)



747-2-04-1-2

DEPARTMENT OF AGRICULTURE
KARNATAKA
EXAMINATION FOR THE POST OF ASSISTANT
AGRICULTURAL OFFICER
THE 30th DEPARTMENTAL EXAMINATION
2011

THE SYLLABUS

General and Professional

1. Candidates will study a total of four subjects with English as one of them. The subjects of the syllabus are: English, Kannada, Agriculture and Professional Subjects.

2. From the above list of the four subjects, candidates may opt for any two.

English
Kannada
Agriculture
Professional Subjects

3. English is intended to measure the ability of candidates to read, understand and write in English. Candidates are asked to read the passage given in the form of a paragraph and to answer the questions.

4. Agriculture and Professional Subjects are to be studied in detail. The syllabus for these subjects is as follows: Agriculture - Soil Science, Plant Nutrition, Plant Pathology, Entomology, Pests and Diseases of Cereals, Horticulture - Principles and Practices of Horticulture, Floriculture, Apiculture, Sericulture, Pisciculture, Poultry and Swine Husbandry, Fisheries, Animal Husbandry - Principles and Practices of Animal Husbandry, Veterinary Medicine, and Animal Husbandry.

5. Candidates are required to study the syllabus of English, Kannada, Agriculture and Professional Subjects in detail. The syllabus for these subjects is as follows: English - Reading Comprehension, Grammar, Vocabulary, and Writing; Kannada - Reading Comprehension, Grammar, Vocabulary, and Writing; Agriculture - Soil Science, Plant Nutrition, Plant Pathology, Entomology, Pests and Diseases of Cereals, Horticulture - Principles and Practices of Horticulture, Floriculture, Apiculture, Sericulture, Pisciculture, Poultry and Swine Husbandry, Fisheries, Animal Husbandry - Principles and Practices of Animal Husbandry, Veterinary Medicine, and Animal Husbandry.

6. Candidates are required to study the syllabus of English, Kannada, Agriculture and Professional Subjects in detail. The syllabus for these subjects is as follows: English - Reading Comprehension, Grammar, Vocabulary, and Writing; Kannada - Reading Comprehension, Grammar, Vocabulary, and Writing; Agriculture - Soil Science, Plant Nutrition, Plant Pathology, Entomology, Pests and Diseases of Cereals, Horticulture - Principles and Practices of Horticulture, Floriculture, Apiculture, Sericulture, Pisciculture, Poultry and Swine Husbandry, Fisheries, Animal Husbandry - Principles and Practices of Animal Husbandry, Veterinary Medicine, and Animal Husbandry.