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University Examinations 2023/2024

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN MOLECULAR BIOLOGY

SZE 5152: MOLECULAR EPIGENETIC MECHANISMS

DATE: APRIL 2024

TIME: 3 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (20 MARKS)

- a) Explain briefly DNA methylation mechanisms (5 marks)
- b) Describe briefly the pharmacological applications of epigenetics (5 marks)
- c) Discuss the various histone modifications (10 marks)

QUESTION TWO (20 MARKS)

- a) Discuss the angiogenesis switch pathways (10 marks)
- b) Describe with example the various transgene silencing mechanisms (10 marks)

QUESTION THREE (20 MARKS)

Discuss functional roles and consequences of epigenetics in plant biological systems

QUESTION FOUR (20 MARKS)

Discuss molecular pathways of drug resistance and emerging molecular therapies in oncology