



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY**

**SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES**

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN  
BIOLOGICAL SCIENCES**

**THIRD YEAR FIRST SEMESTER 2018/2019 ACADEMIC YEAR**

**MAIN CAMPUS - REGULAR**

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<b>COURSE CODE:</b>	<b>SBI 3316</b>
<b>COURSE TITLE:</b>	<b>HISTOLOGY</b>
<b>EXAM VENUE:</b>	<b>STREAM:</b>
<b>DATE:</b>	<b>EXAM SESSION:</b>

**TIME: 2 HOURS**

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**Instructions:**

- 1. Answer ALL questions in Section A and any TWO questions in Section B.**
  - 2. Candidates are advised not to write on question paper.**
  - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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## **SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)**

1. Outline three sources of artefacts in histological sections. (3 marks)
2. Distinguish between the following:
  - a) Type I and type III collagen. (1 mark)
  - b) Anaxonic and bipolar neuron (1 mark)
  - c) Periosteum and endosteum (1 mark)
3. Use a diagram to distinguish the three types of cartilages. (3 marks)
4. Briefly describe the structure and give one function of the basal lamina (3 marks)
5. Outline three protein components of blood and give the function of each. (3 marks)
6. Give a brief account of the principle of phase contrast microscopy and its application in histology. (3 marks)
7. Briefly describe three modes of secretion by exocrine glands. (3 marks)
8. Briefly describe the following structures in relation to skeletal muscles
  - a) Z disc (1 mark)
  - b) A- band (1 mark)
  - c) Sarcomere (1 mark)
9. Briefly describe the structure and state the function of ganglia. (3 marks)
10. Illustrate the structure of the skin dermis layer. (3 marks)

## **SECTION B: ESSAY QUESTIONS (40 MARKS)**

11. Describe a synapse in terms of the components, function and possible patterns of arrangement. (20 marks)
12. Discuss the composition and structure and bone tissue (20 marks)
13. Describe epithelial tissue with respect to the types, tissue location and function. (20 marks)
14.
  - a) Give a detailed account of the types and application of chemical fixatives. (10 marks)
  - b) Describe the steps involved in fixation of brain tissue. (10 marks)