



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

**SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES**

**DEPARTMENT OF BIOLOGICAL SCIENCES**

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

**2<sup>nd</sup> YEAR 1<sup>ST</sup> SEMESTER 2016/2017 ACADEMIC YEAR**

**MAIN CAMPUS - REGULAR**

---

**COURSE CODE: SBI 3225**

**COURSE TITLE: GYMNOSPERM AND ANGIOSPERM TAXONOMY**

**EXAM VENUE: STREAM: (BIO)**

**DATE: EXAM SESSION:**

**TIME: 2 HOURS**

---

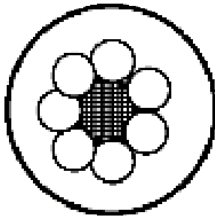
**Instructions:**

- 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**
-

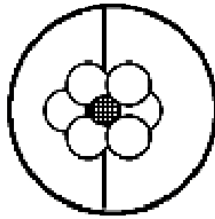
**SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)**

1. Sketch a hypothetical leaf with the following descriptions: Leaf palmately compound, the leaflets lanceolate, entire, cuneate and mucronate. (3 Marks)
2. What advantage does the reproductive system of the gymnosperms have over that of the ferns? (3 Marks)
3. Describe three types of botanical classification of gymnosperms (3 Marks)
4. Give the type of placentation and number of locules for the following ovary types (drawings represent ovary cross-sections): (3 Marks)

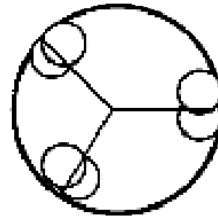
A.



B.



C.



5. With specific examples enumerate the economic importance of the family Rosaceae (3Marks)
6. Using corolla characteristics only, distinguish between the subfamilies in the family Leguminosae. (3 Marks)
7. Describe briefly the logical steps used in numerical taxonomy methodology. (3Marks)
8. Outline any three basic principles that control and regulate the naming of plants. (3 Marks)
9. Provide short definitions for the following terms: dioecious, polypetalous and monophyletic (3 Marks)
10. Briefly contrast the following pairs of terms. (3 Marks)
  - A. Adnate vs. Connate
  - B. Androecium vs. Gynoecium
  - C. Rhizome vs. Bulb

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

11. Discuss at length the role of herbarium plant collections in enhancing taxonomic research today. (20 Marks)
12. Discuss in detail the modern taxonomic evidence that may be applied to taxonomic research. (20 Marks)
13. Describe the morphological and economic importance of the family *Compositae* (*Asteraceae*). (20 Marks)
14. Using examples, discuss the rules for giving scientific names to plants in accordance to the International Code of Botanical Nomenclature. (20 Marks)