NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES

DEPARTMENT OF NATURAL RESOURCES SCIENCES

QUALIFICATION: BACHELOR OF NATURAL RESOURCES MANAGEMENT	
QUALIFICATION CODE: 07BNRS	**LEVEL:** 7
COURSE CODE: PTS710S	**COURSE NAME:** Plant Studies 2
DATE: JULY 2023	
DURATION: 3 HOURS	**MARKS:** 100

SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Dr. J. M. Kamwi
MODERATOR:	Prof. E.G. Kwembeya

INSTRUCTIONS
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Examination question paper
2. Answering book
3. Calculator

THIS QUESTION PAPER CONSISTS OF 3 PAGES (Excluding this front page)

1. Give one word / term for the following: [5]
   a. The place responsible for storing and preserving dried plants.
   b. The father of modern taxonomy.
   c. The arrangement of organisms from most primitive to most advanced.
   d. The very first specimen described of any taxon.
   e. The Ministry responsible for protecting forests in Namibia.

2. Explain what a pseudaril is and what its function is. [2]

3. Explain the extreme diversity of secondary metabolism in angiosperms. [2]

4. Explain the importance of co-evolution between plants and their predators. [2]

5. Explain the material transfer agreements (MTAs) in which NBRI participates. [2]

6. The genus *Terminalia* is famous for having a single winged samara that encases the seed. Apparently, there are other non-Terminalia species with this property. Name one of these species and indicate its substrate. [2]

7. The taxa listed in column A have many uses. Choose the most important use from the list in column B. NB no use in column B may be selected more than once. Write down the number from column A and the corresponding letter from column B, example (1); D. [6]

Column A – taxon	**Column B – important use**
(1) *Colophospermum mopane*	A. Aromatic resin
(2) *Combretum apiculatum*	B. Browse for giraffe
(3) *Burkea africana*	C. Tanning leather
(4) *Boscia albitrunca*	D. Browse for kudu
(5) *Elephantorrhiza suffruticosa*	E. Timber
(6) *Commiphora wildii*	F. Fire wood

8. This is a jumble of Fabaceae subfamilies. Put the following species in the correct subfamily. Write down the numbers in column A and the corresponding letters in column B. note: [18]
   Several species may belong to the same subfamily.

COLUMN A - SUBFAMILY	**COLUMN B - SPECIES**
(1) Mimosoideae	A. *Pterocarpus angolensis*
(2) Caesalpinioideae	B. *Philenoptera violacea*
(3) Papilionoideae	C. *Mundulea sericea*
	D. *Guibourtia coleosperma*
	E. *Erythrina decora*
	F. *Abrus precatorius*
	G. *Colophospermum mopane*
	H. *Peltophorum africanum*
	H. *Baphia massaiensis*
	J. *Baikiaea plurijuga*
	K. *Burkea africana*

	L. *Elephantorrhiza suffruticosa*
	M. *Albizia anthelmintica*
	N. *Dichrostachys cinerea*
	O. *Faidherbia albida*
	P. *Acacia reficiens*
	Q. *Acacia luederitzii*
	R. *Erythrophleum africanum*

9. What was Darwin's contribution in plant classification during the 19th century? [6]

10. Describe the stems and tendrils of Cucurbitaceae family members. [2]

11. Those who have never studied plants often mistakenly refer to the flower of a particular plant when in fact they mean the entire inflorescence. Please explain this statement by elaborating the difference between flowers and inflorescences. [4]

12. Most members of Ebenaceae have persistent calyxes. Discuss this description and name other two genera in this family which are found in Namibia. [4]

13. For each of the following descriptions of species, give (a) the scientific name (b) the family (c) economic importance in Namibia and (d) distribution in Namibia. Bonus points for common names.

    13.1 Large attractive deciduous tree, 10-18 m high, sometimes even bigger with a dense spreading crown, imparipinately compound leaves, male and female flowers on separate trees, fruit a spherical tough-skinned drupe, pale creamy yellow when ripe, edible fruit. [4]

    13.2 Deciduous or semi-deciduous tree with a rounded crown, up to 12 m high, simple leaves, alternate or spirally arranged, fruit ovoid-oblong berry, fleshy, yellow fruit when ripe. [4]

    13.3 V-shaped shrub or small tree with bipinnately compound leaves, 2-3 pinnae pairs; each pinna with 1-2 leaflets pairs; leaflets 10 x 5 mm; strongly curved paired thorns at nodes; flowers in round, creamy white heads; bark with white lenticels. [4]

14. Each of the following plant species is very typical of a certain vegetation type in Namibia. Name the vegetation type in which each occurs. [4]
    a) *Acacia hereroensis*
    b) *Acanthosicyos horridus*
    c) *Pterocarpus angolensis*
    d) *Spirostachys africana*

15. For each of the following – describe the leaves, inflorescence and fruit. [12]
    a) *Maerua juncea*
    b) *Ozoroa paniculosa*
    c) *Searsia lancea*
    d) *Combretum hereroensis*

16. Define the following terminologies: - [10]
    (a) Sympetalous
    (b) Synfilamentous
    (c) Adnation (adnate)
    (d) Megacarpa
    (e) Microcarpa
    (f) Perianth
    (g) Androecium
    (h) Gynoecium
    (i) Diagnostic characters
    (j) Type specimen

17. Describe the characteristics of a suffrutex plant. [3]

18. Explain what a lineage is. [2]