Registration form

Carnivorous Plant Identification and Cultivation
CEU Training Course $75.00
48 HOUR RUSH ORDER PROCESSING FEE ADDITIONAL $50.00

Start and finish dates: _____
You will have 90 days from this date in order to complete this course

Print Name_____
I have read and understood the disclaimer notice found on page 4. Signature is required.
You can electronically sign with XXX

Signature _____

Address: _____

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Fax (____)_____ Email_____

License or
Operator ID #_____Exp. Date_____

Class/Grade_____
Please circle/check which certification you are applying the course CEU's.

Commercial Applicator___ Residential Applicator___ Industrial Applicator___

Pesticide Handler___ Agricultural Applicator___ Adviser___ Other _____

Your certificate will be mailed to you in about two weeks.

Technical Learning College
PO Box 420, Payson, AZ 85547-0420
(928) 468-0665 Toll Free (866) 557-1746
info@tlch2o.com Fax: (928) 272-0747

Discover card **CCV code on card_____**
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DISCLAIMER NOTICE
I understand that it is my responsibility to ensure that this CEU course is either approved or accepted in my State for CEU credit. I understand State laws and rules change on a frequent basis and I believe this course is currently accepted in my State for CEU or contact hour credit, if it is not, I will not hold Technical Learning College responsible. I also understand that this type of study program deals with dangerous conditions and that I will not hold Technical Learning College, Technical Learning Consultants, Inc. (TLC) liable for any errors or omissions or advice contained in this CEU education training course or for any violation or injury caused by this CEU education training course material. I will call or contact TLC if I need help or assistance and double-check to ensure my registration page and assignment has been received and graded.

State Approval Listing Link, check to see if your State accepts or has pre-approved this course. Not all States are listed. Not all courses are listed. If the course is not accepted for CEU credit, we will give you the course free if you ask your State to accept it for credit.

Professional Engineers; Most states will accept our courses for credit but we do not officially list the States or Agencies. Please check your State for approval.

State Approval Listing URL…
http://www.tlch2o.com/PDF/CEU%20State%20Approvals.pdf

You can obtain a printed version of the course manual from TLC for an additional $49.95 plus shipping charges.

Grading Information
In order to maintain the integrity of our courses we do not distribute test scores, percentages or questions missed. Our exams are based upon pass/fail criteria with the benchmark for successful completion set at 70%. Once you pass the exam, your record will reflect a successful completion and a certificate will be issued to you.

Please fax or e-mail the answer key to TLC
Western Campus Fax (928) 272-0747.

Rush Grading Service
If you need this assignment graded and the results mailed to you within a 48-hour period, prepare to pay an additional rush service handling fee of $50.00. This fee may not cover postage costs. If you need this service, simply write RUSH on the top of your Registration Form. We will place you in the front of the grading and processing line.

Thank you…

Please e-mail or fax this survey along with your final exam

CARNIVOROUS PLANT IDENTIFICATION AND CULTIVATION PROFESSIONAL DEVELOPMENT COURSE

CUSTOMER SERVICE RESPONSE CARD

NAME: _____

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MAIL_____PHONE_____

PLEASE COMPLETE THIS FORM BY CIRCLING THE NUMBER OF THE APPROPRIATE ANSWER IN THE AREA BELOW.

1. Please rate the difficulty of your course.
   Very Easy 0 1 2 3 4 5 Very Difficult

2. Please rate the difficulty of the testing process.
   Very Easy 0 1 2 3 4 5 Very Difficult

3. Please rate the subject matter on the exam to your actual field or work.
   Very Similar 0 1 2 3 4 5 Very Different

4. How did you hear about this Course?_____

5. What would you do to improve the Course?

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How about the price of the course?

Poor_____ Fair ____ Average ____ Good____ Great_____

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Any other concerns or comments.

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Important Information about this Course (Disclaimer Notice)

This CEU course has been prepared to educate pesticide applicators and operators in general safety awareness of dealing with the often-complex and various pesticide treatment sprays, devices, methods, and applications. This course (manual) will cover general laws, regulations, required procedures and accepted policies relating to the use of pesticides and herbicides. It should be noted, however, that the regulation of pesticides and hazardous materials is an ongoing process and subject to change over time. For this reason, a list of resources is provided to assist in obtaining the most up-to-date information on various subjects. This manual is a not a guidance document for applicators or operators who are involved with pesticides. It is not designed to meet the requirements of the United States Environmental Protection Agency or your local State environmental protection agency or health department. This course manual will provide general pesticide safety awareness and should not be used as a basis for pesticide treatment method/device guidance. This document is not a detailed pesticide informational manual or a source or remedy for poison control.

Technical Learning College or Technical Learning Consultants, Inc. makes no warranty, guarantee or representation as to the absolute correctness or appropriateness of the information in this manual and assumes no responsibility in connection with the implementation of this information. It cannot be assumed that this manual contains all measures and concepts required for specific conditions or circumstances. This document should be used for educational purposes only and is not considered a legal document. Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Confine chemicals to the property or plants being treated. Avoid drift onto neighboring properties, especially gardens containing fruits and/or vegetables ready to be picked. Dispose of empty containers carefully. Follow label instructions for disposal. Never reuse containers. Make sure empty containers are not accessible to children or animals. Never dispose of containers where they may contaminate water supplies or natural waterways. Do not pour down sink or toilet. Consult your county agricultural commissioner for correct ways of disposing of excess pesticides. You should never burn pesticide containers.

Individuals who are responsible for pesticide storage, mixing and application should obtain and comply with the most recent federal, state, and local regulations relevant to these sites and are urged to consult with the EPA and other appropriate federal, state and local agencies.

USE PESTICIDES WISELY: ALWAYS READ THE ENTIRE PESTICIDE LABEL CAREFULLY, FOLLOW ALL MIXING AND APPLICATION INSTRUCTIONS AND WEAR ALL RECOMMENDED PERSONAL PROTECTIVE GEAR AND CLOTHING. CONTACT YOUR STATE DEPARTMENT OF AGRICULTURE FOR ANY ADDITIONAL PESTICIDE USE REQUIREMENTS, RESTRICTIONS OR RECOMMENDATIONS.

NOTICE: MENTION OF PESTICIDE PRODUCTS IN THIS COURSE DOES NOT CONSTITUTE ENDORSEMENT OF ANY MATERIAL OR HERB OR HERBAL SUPPLEMENT. ALWAYS FOLLOW THE PRODUCT'S LABEL INSTRUCTIONS.

NOTICE

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Carnivorous Plants Answer Key Version #1 or #2 or #3 or #4

Please Circle or Bold your Assignment

Name_____ **Telephone** _____

1. **A B C D E**	26. **A B C D E**	51. **A B C D E**	76. **A B C D E**
2. **A B C D E**	27. **A B C D E**	52. **A B C D E**	77. **A B C D E**
3. **A B C D E**	28. **A B C D E**	53. **A B C D E**	78. **A B C D E**
4. **A B C D E**	29. **A B C D E**	54. **A B C D E**	79. **A B C D E**
5. **A B C D E**	30. **A B C D E**	55. **A B C D E**	80. **A B C D E**
6. **A B C D E**	31. **A B C D E**	56. **A B C D E**	81. **A B C D E**
7. **A B C D E**	32. **A B C D E**	57. **A B C D E**	82. **A B C D E**
8. **A B C D E**	33. **A B C D E**	58. **A B C D E**	83. **A B C D E**
9. **A B C D E**	34. **A B C D E**	59. **A B C D E**	84. **A B C D E**
10. **A B C D E**	35. **A B C D E**	60. **A B C D E**	85. **A B C D E**
11. **A B C D E**	36. **A B C D E**	61. **A B C D E**	86. **A B C D E**
12. **A B C D E**	37. **A B C D E**	62. **A B C D E**	87. **A B C D E**
13. **A B C D E**	38. **A B C D E**	63. **A B C D E**	88. **A B C D E**
14. **A B C D E**	39. **A B C D E**	64. **A B C D E**	89. **A B C D E**
15. **A B C D E**	40. **A B C D E**	65. **A B C D E**	90. **A B C D E**
16. **A B C D E**	41. **A B C D E**	66. **A B C D E**	91. **A B C D E**
17. **A B C D E**	42. **A B C D E**	67. **A B C D E**	92. **A B C D E**
18. **A B C D E**	43. **A B C D E**	68. **A B C D E**	93. **A B C D E**
19. **A B C D E**	44. **A B C D E**	69. **A B C D E**	94. **A B C D E**
20. **A B C D E**	45. **A B C D E**	70. **A B C D E**	95. **A B C D E**
21. **A B C D E**	46. **A B C D E**	71. **A B C D E**	96. **A B C D E**
22. **A B C D E**	47. **A B C D E**	72. **A B C D E**	97. **A B C D E**
23. **A B C D E**	48. **A B C D E**	73. **A B C D E**	98. **A B C D E**
24. **A B C D E**	49. **A B C D E**	74. **A B C D E**	99. **A B C D E**
25. **A B C D E**	50. **A B C D E**	75. **A B C D E**	100. **A B C D**

You are finished with your assignment. Please fax this answer key, registration page and customer survey to TLC. Fax Number (928) 272-0747

If you are a California DPR or Nevada student, we will require a photocopy of your driver's license.

Always call us after faxing the paperwork to ensure that we've received it. Allow two weeks for processing and for the proper DPR forms to be sent back to you. If you need this course graded and your certificate sooner, add a $50.00 rush fee. This may not include postage charges. ***Thank you for your business***

INSTRUCTIONS

1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.
2. You will need to pick one of the following three assignments to complete. This selection process is based upon your last name.
3. If your last name begins with an A to G, you will pick assignment number 1, if your last name begins with the letter H to P, you are to complete assignment number 2 and if your last name begins with the letter Q-Z, you will pick assignment number 3.

Assignment #1 if your last name begins with A-G you will find your assignment on pages 7-21.

Assignment #2 if your last name starting with the letter H-P, your assignment is found on pages 23-38.

Assignment #3 if your last name starting with the letter Q-Z, your assignment is found on pages 39-54.

Carnivorous Plant Identification and Cultivation
Assignment #1 Last Names A-G

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 70 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 272-0747. This assignment is available to you in a Word Format on TLC's Website. You can find online assistance for this course on the in the Search function on Adobe Acrobat PDF to help find the answers. Once you have paid the course fee, you will be provided complete course support from Student Services (928) 468-0665.

Write your answers on the Answer Key found in the front of this assignment.

Instructions
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Plant Identification Terms

1. One with a blade in one piece; not compound.
A. Stolon
B. Spur
C. Spikelet
D. Spike
E. Simple leaf

2. A narrow, non-spreading inflorescence.
A. Stolon
B. Spur
C. Spikelet
D. Spike
E. Simple leaf

3. The structure formed where leaves, stems, and roots grow together.
A. Crown
B. Cotyledons
C. Calyx
D. Compound leaves
E. Clasping leaves

4. A creeping, underground stem.
A. Rosette
B. Rhizome
C. Pubescence
D. Ligule
E. Sheath

5. All the flower leaves together, normally green in color.
A. Crown
B. Cotyledons
C. Calyx
D. Compound leaves
E. Clasping leaves

6. A single or group of floral structures in a grass.
A. Stolon
B. Spur
C. Spikelet
D. Spike
E. Simple leaf

7. A circular, normally basal, clump of leaves.
A. Rosette
B. Rhizome
C. Pubescence
D. Ligule
E. Sheath

8. At the base of a plant or plant part.
A. Plume
B. Axil
C. Biennial
D. Basal
E. Bract

9. Plant that germinates in one growing season, then flowers, seeds, and dies during the next year.
A. Plume
B. Axil
C. Biennial
D. Basal
E. Bract

10. Leaf-like structure at the base of flowers or leaves.
A. Plume
B. Axil
C. Biennial
D. Basal
E. Bract

11. The extension of leaf tissue surrounding a stem.
A. Rosette
B. Rhizome
C. Pubescence
D. Ligule
E. Sheath

12. The angle formed between a leaf and a stem.
A. Plume
B. Axil
C. Biennial
D. Basal
E. Bract

13. A hollow appendage on a flower.
A. Stolon
B. Spur
C. Spikelet
D. Spike
E. Simple leaf

14. A creeping stem along the surface of the ground.
A. Stolon
B. Spur
C. Spikelet
D. Spike
E. Simple leaf

15. A hair-like or feather-like structure, often on a seed.
A. Plume
B. Axil
C. Biennial
D. Basal
E. Bract

16. The structure at the collar of a grass leaf between the sheath and the stem.
A. Rosette
B. Rhizome
C. Pubescence
D. Ligule
E. Sheath

17. The hairs on a leaf, stem or flower.
A. Rosette
B. Rhizome
C. Pubescence
D. Ligule
E. Sheath

18. The first leaf-like structures that appear after germination; seed leaves.
A. Crown
B. Cotyledons
C. Calyx
D. Compound leaves
E. Clasping leaves

19. Leaves that appear to wrap around the stem at their base.
A. Crown
B. Cotyledons
C. Calyx
D. Compound leaves
E. Clasping leaves

20. Leaves with 2 or more distinct leaflets.
A. Crown
B. Cotyledons
C. Calyx
D. Compound leaves
E. Clasping leaves

21. Deeply and repeatedly divided into smaller parts.
A. Leaflets
B. Dissected
C. Head
D. Glumes
E. Entire

22. Not toothed or otherwise cut.
A. Leaflets
B. Dissected
C. Head
D. Glumes
E. Entire

23. The 2 bracts surrounding a grass spikelet.
A. Leaflets
B. Dissected
C. Head
D. Glumes
E. Entire

24. A group of flowers borne tightly together.
A. Leaflets
B. Dissected
C. Head
D. Glumes
E. Entire

25. Leaf-like structures within a compound leaf.
A. Leaflets
B. Dissected
C. Head
D. Glumes
E. Entire

26. Leaves that are arranged singly up the stem; not opposite each other.
A. Auricle
B. Awn
C. Anther
D. Annual
E. Alternate

27. Plant that germinates, flowers, seeds, and dies during one growing season.
A. Auricle
B. Awn
C. Anther
D. Annual
E. Alternate

28. Structure in a flower in which pollen is formed
A. Auricle
B. Awn
C. Anther
D. Annual
E. Alternate

29. Lobe-like structure at the collar of a grass leaf.
A. Auricle
B. Awn
C. Anther
D. Annual
E. Alternate

30. Slender bristle at the tip of grass seed structures.
A. Auricle
B. Awn
C. Anther
D. Annual
E. Alternate

31. The edge of a leaf.
A. Margin
B. Opposite
C. Nodding
D. Midrib
E. Membranous

32. Thin and flexible, usually not green.
A. Margin
B. Opposite
C. Nodding
D. Midrib
E. Membranous

33. The center and usually most prominent vein on a leaf.
A. Margin
B. Opposite
C. Nodding
D. Midrib
E. Membranous

34. A flower that is not pointed upward, but bent downward or sidewise to the stem.
A. Margin
B. Opposite
C. Nodding
D. Midrib
E. Membranous

35. Leaves situated directly across the stem from each other.
A. Margin
B. Opposite
C. Nodding
D. Midrib
E. Membranous

36. Egg-shaped in outline.
A. Petiole
B. Panicle
C. Pinnate
D. Perennial
E. Ovate

37. A much-branched inflorescence.
A. Petiole
B. Panicle
C. Pinnate
D. Perennial
E. Ovate

38. A plant that lives for more than 2 growing seasons.
A. Petiole
B. Panicle
C. Pinnate
D. Perennial
E. Ovate

39. A leaf stalk.
A. Petiole
B. Panicle
C. Pinnate
D. Perennial
E. Ovate

40. With 2 rows of leaflets, like a feather.
A. Petiole
B. Panicle
C. Pinnate
D. Perennial
E. Ovate

41. A thick, central root with minimal branching.
A. Trifoliate leaf
B. Lobed
C. Whorled
D. Taproot
E. Linear

42. A leaf made of 3 leaflets; clover-like.
A. Trifoliate leaf
B. Lobed
C. Whorled
D. Taproot
E. Linear

43. 3 or more similar structures arranged as spokes on a wheel.
A. Trifoliate leaf
B. Lobed
C. Whorled
D. Taproot
E. Linear

44. Long, narrow, and slender.
A. Trifoliate leaf
B. Lobed
C. Whorled
D. Taproot
E. Linear

45. A cut into a leaf from the edge toward the center; greater than toothed, but not quite compound.
A. Trifoliate leaf
B. Lobed
C. Whorled
D. Taproot
E. Linear

This section will come from the text of the reading assignment.

46. Carnivorous plants (sometimes called insectivorous plants) are plants that derive some or _____ (but not energy) from trapping and consuming animals or protozoans, mostly focusing on insects and other arthropods. About 400 plants are carnivorous.
A. Acidic bogs and rock outcroppings
B. Venus flytrap
C. Produce digestive enzymes
D. Nitrogen and potassium
E. Most of their nutrients

47. Carnivorous plants do not eat meat, but they do trap animals — mostly insects. The best known is probably the Venus flytrap. As its name implies, the plant traps flies and other insects and ingests them for their _____.
A. Acidic bogs and rock outcroppings
B. Venus flytrap
C. Produce digestive enzymes
D. Nitrogen and potassium
E. Most of their nutrients

48. The _____has honey-coated leaves that attract insects. Each leaf has sensitive trigger hairs that detect when an insect has landed on the leaf and then snaps shut.
A. Acidic bogs and rock outcroppings
B. Venus flytrap
C. Produce digestive enzymes
D. Nitrogen and potassium
E. Most of their nutrients

49. The _____produces enzymes that help it digest its prey.
A. Acidic bogs and rock outcroppings
B. Venus flytrap
C. Produce digestive enzymes
D. Nitrogen and potassium
E. Most of their nutrients

50. These _____ represent a convenient source of food to small insectivores.
A. Pitfall trap
B. Pitchers
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

51. N. bicalcarata possesses two sharp thorns that project from the base of the operculum over the entrance to the _____, providing some protection from raids by freeloading mammals.
A. Pitfall trap
B. Pitcher
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

52. The _____has evolved independently in at least two other groups.
A. Pitfall trap
B. Pitcher Plant
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

53. The Albany pitcher plant _____is a small pitcher plant from Western Australia, with moccasin-like pitchers.
A. Pitfall trap
B. Pitcher Plant
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

54. The rim of its _____ opening (the peristome) is particularly pronounced (both secrete nectar) and provides a thorny overhang to the opening, preventing trapped insects from climbing out.
A. Pitfall trap
B. Pitcher's
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

55. The lining of most _____is covered in a loose coating of waxy flakes, which are slippery for insects, prey that are often attracted by nectar bribes secreted by the peristome, and by bright flower-like anthocyanin patterning.
A. Pitfall trap
B. Pitcher plants
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

56. _____, the nectar bribe is laced with coniine, a toxic alkaloid also found in hemlock, which probably increases the efficiency of the traps by intoxicating prey.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

57. _____, also known as Yellow Trumpet Plant, is commonly found throughout the southeast US.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

58. _____are most colorful near their mouths to ensure the insects notice and are drawn to that area.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Trumpets
E. None of the Above

Bromeliads

59. The final carnivore with a pitfall-like trap is the bromeliad, _____. Like most relatives of the pineapple, the tightly-packed, waxy leaf bases of the strap-like leaves of this species form an urn.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Brocchinia reducta
E. None of the Above

60. In most bromeliads, water collects readily in this urn, and may provide habitats for frogs, insects and more usefully for the plant, _____.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

61. In Brocchinia, the urn is a specialized insect trap, with a loose, waxy lining and a population of digestive _____.
A. Pineapple
B. Bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

62. _____ is a large family of flowering plants native to the tropical and warm temperate New World.
A. Bromeliaceae (the bromeliads)
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

63. The family includes both epiphytes, such as _____, and ground (terrestrial) plants, such as the pineapple Ananas comosus.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

64. Many _____ are able to store water in a "tank" formed by their tightly-overlapping leaf bases.
A. Bromeliads
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

65. The family is diverse enough to include the tank bromeliads, grey-leaved epiphytic _____ species which gather water only from leaf structures called trichomes, and a large number of desert-dwelling succulents.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Tillandsia
D. Puya raimondii
E. None of the Above

66. The largest bromeliad is _____, which reaches 3–4 m tall in vegetative growth with a flower spike 9–10 m tall, and the smallest is probably Spanish moss.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

Where they Grow
67. _____are a Neotropical family which means they grow virtually exclusively in the New World tropics (and subtropics).
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

68. _____ altitude range is from sea level to over 14,000 feet.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

69. _____ can be found in a wide variety of habitats from hot, dry deserts to moist rainforests to cool mountainous regions.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

70. _____are found in a variety of growing situations: Terrestrial species are found growing in the ground (the way we expect most plants to grow).
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

71. They may be found growing in bright sun along _____of a forest among the leaf litter and debris.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

72. _____are found growing on rocks. They may grow on hard rocky outcrops where their roots may penetrate cracks and fissures to locate moisture or organic nutrients or sometimes they are found growing tenuously on sheer cliff faces.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

73. _____are found growing on other plants, usually trees, shrubs or cactus but sometimes they can be found on telephone poles or even on the telephone lines themselves. This capability to take their nutrition and moisture from the atmosphere has earned these bromeliads the name "Air Plants".
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

How They Grow
74. All bromeliads are composed of a spiral arrangement of leaves sometimes called a " _____".
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

75. The number of degrees between _____ varies from species to species with a few having a 180 degree separation between leaves.
A. Epiphytic species
B. Successive leaves
C. Bromeliads
D. Rosette
E. None of the Above

76. This causes the plant to grow in a flattened configuration with its leaves lined up in a single plane. The bases of the leaves in the _____ may overlap tightly to form a water reservoir.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

77. This central cup also collects whatever leaf litter and insects happen to land in it. The more ancestral terrestrial _____ do not have this water storage capability and rely primarily on their roots for water and nutrient absorption.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

Tank Bromeliads

78. Tank bromeliads (as the water storing species are often called) rely less heavily on their roots for nourishment and are more often found as _____.
A. Epiphytes
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

79. The roots of _____harden off after growing to form holdfasts as strong as wire that help attach the plant to its host.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

80. Even though bromeliads are commonly called _____ in Spanish-speaking countries, these epiphytes do not take sustenance from their host but merely use it for support.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

81. In some species, the bases of the leaves form small chambers as they overlap; these protected spaces are often home to ants. In exchange for _____, the ants' waste may provide the bromeliad with extra fertilizer.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

82. Certain _____, members of the bromeliad family, do the exact opposite of most flowers by opening their flowers at night and closing them during the day to protect them from weevils, which are most active during daylight hours.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

83. All _____ share a common characteristic: tiny scales on their leaves called trichomes.
A. Epiphytic species
B. Patterns and banding
C. Parasitos
D. Bromeliads
E. None of the Above

84. These scales serve as a very _____. In species found in desert regions where the air is hot and dry and the sun beats down relentlessly, these scales also help the plant to reduce water loss and shield the plants from the solar radiation.
A. Center of the rosette
B. Efficient absorption system
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

85. These plants are covered with many scales that they appear _____.
A. Center of the rosette
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

86. On many species (especially in more humid areas), the scales are smaller and less noticeable. Sometimes the scales can form _____on the leaves that add to the plant's beauty.
A. Center of the rosette
B. Patterns and banding
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

Flower Stalk
87. With few exceptions, the flower stalk is produced from the _____.
A. Center of the rosette
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

88. The stalk (or _____ as it is called), may be long with the flowers held far away from the plant (either erect or hanging pendantly) or the scape may be short with the flowers nestled in the rosette.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

89. The scape may produce a single flower or many individual flowers and may have colorful leaf-like appendages called _____bracts that serve to attract pollinators and delight bromeliad enthusiasts.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

90. With rare exceptions, bromeliads only flower a single time - once the plant stops producing leaves and produces its flower, it will not start making leaves again. It will, however, vegetatively produce new plantlets called "_____" or "pups".
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

91. These plants will feed off the "_____" plant until they are large enough to set roots of their own and survive as a separate plant.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

92. The _____ may sometimes survive a generation or two before finally dying off. Pups are usually produced near the base of the plant - inside the sheath of a leaf.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

93. Sometimes, pups may be produced on long stolons or atop the inflorescence (flower spike) of the _____ plant. The green, leafy top of a pineapple is in fact a pup that may be removed and planted to start a new plant.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

94. _____are particularly suited to rainforest environments.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

95. They are _____ in that they often cling onto and climb up the outside of trees and tree stumps, but they gain most of their nutrients not from the roots, but from the reservoir of water and detritus stored in the middle of the leaf well.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

96. _____ can store water for an incredible length of time, enabling them to survive lengthy periods of drought.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. None of the Above

97. Inflorescence: The flowers of a bromeliad are grouped into an inflorescence. This usually appears 4-6 years after germination and occupies a terminal position on the _____.
A. Inflorescence
B. Rosette
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

98. Bromeliad flowers tend to be short-lived, but most species possess colorful modified leaves called _____that last for a much longer time.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

99. Bromeliad _____ attract a range of animals for pollination including hummingbirds, bats, moths and butterflies.
A. Inflorescences
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

100. Bromeliads colorful _____have also led to the popularity of bromeliads as ornamental plants. The basal bloomless part of the inflorescence is known as the scape. The scape usually bears scape bracts in a loose arrangement.
A. Inflorescences
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

You are finished with your assignment. Please fax this answer key, registration page and customer survey to TLC.

We will require a photocopy of your driver's license.

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Always call us after faxing the paperwork to ensure that we've received it. Allow two weeks for processing and for the proper DPR forms to be sent back to you. If you need this course graded and your certificate sooner, add a $50.00 rush fee. This may not include postage charges. **Thank you for your business**

Carnivorous Plant Identification and Cultivation
Assignment #2 Last Names H-P

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 70 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 272-0747. This assignment is available to you in a Word Format on TLC's Website. You can find online assistance for this course on the in the Search function on Adobe Acrobat PDF to help find the answers. Once you have paid the course fee, you will be provided complete course support from Student Services (928) 468-0665.

Write your answers on the Answer Key found in the front of this assignment.

If you are a California DPR or Nevada student, things have changed and we had to implement new security features to keep those agencies happy.
1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.

2. You will need to pick one of the following three assignments to complete. This selection process is based upon your last name. If your last name begins with an A to G, you will pick assignment number 1, if your last name begins with the letter H to P, you are to complete assignment number 2 and if your last name begins with the letter Q-Z, you will pick assignment number 3.

Carnivorous Plant Introduction
1. Carnivorous plants (sometimes called insectivorous plants) are plants that derive some or most of their nutrients (but not energy) from trapping and consuming animals or _____, mostly focusing on insects and other arthropods.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

2. About 400 plants are carnivorous. These plants do not _____, but they do trap animals — mostly insects.
A. Enzymes
B. Eat meat
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

3. The best known is probably the Venus flytrap. As its name implies, the plant traps flies and other insects and ingests them for their _____.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Nitrogen and potassium
E. None of the Above

4. The plant has honey-coated leaves that attract insects. Each leaf has _____that detect when an insect has landed on the leaf and then snaps shut.
A. Enzymes
B. Sensitive trigger hairs
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

5. The plant produces _____ that help it digest its prey.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

6. Carnivorous plants usually grow in places where the soil is thin or poor in _____, especially nitrogen, such as acidic bogs and rock outcroppings.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Nutrients
E. None of the Above

7. True carnivory is thought to have evolved in at least 10 separate lineages of plants, and these are now represented by more than a _____in 5 families.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Dozen genera
E. None of the Above

8. Five basic _____are found in carnivorous plants.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Trapping mechanisms
E. None of the Above

9. Pitfall traps (pitcher plants) trap prey in a rolled leaf that contains a pool of digestive _____ or bacteria.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

10. Flypaper traps use a _____.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

11. _____utilize rapid leaf movements.
A. Enzymes
B. Snap traps
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

12. _____suck in prey with a bladder that generates an internal vacuum.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Bladder traps
E. None of the Above

13. Lobster-pot traps force prey to move towards a _____with inward pointing hairs.
A. Enzymes
B. Digestive organ
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

14. These traps may be _____, depending on whether movement aids the capture of prey.
A. Enzymes
B. Active or passive
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

15. Triphyophyllum is a passive flypaper that _____, but whose leaves do not grow or move in response to prey capture.
A. Enzymes
B. Protozoans
C. Secretes mucilage
D. Lobster-pot traps
E. None of the Above

16. Sundews are active flypapers whose leaves undergo rapid growth, aiding in the _____of prey.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Retention and digestion
E. None of the Above

2 Major Groups
17. _____may be subdivided into 2 major groups; those with passive traps and those with active traps. For some of these traps, the actual method of insect decomposition involves digestive enzymes produced by the plant and bacterial decay within the trap.
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

18. A classic passive trap is the "pitfall trap" of pitcher plants, including Darlingtonia and Sarracenia of the _____, and Nepenthes of the Nepenthaceae, where an insect falls into a vase-like modified leaf.
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

19. Downward-pointing hairs on the slippery walls prevent the insect from crawling out, and the hapless victim ultimately drowns in a _____at the bottom.
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

20. Other well-known passive traps are the "flypaper" or adhesive traps of sundews (_____) and butterworts (Pinguicula, Lentibulariaceae).
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

21. In both of these unrelated genera, the leaves are covered with sticky, gland-tipped hairs (Drosera) or a sticky (viscid) layer of mucilage (_____) which entangle the hopeless, struggling victim.
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

Pitfall Traps
22. Pitfall traps are thought to have evolved independently on at least four occasions. The simplest ones are probably those of _____, the sun pitcher plant. In this genus, the traps are clearly derived evolutionarily from a simple rolled leaf whose margins have sealed together.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

23. These plants live in areas of high rainfall in South America such as Mount Roraima, and consequently have a problem ensuring their _____ do not overflow.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

24. To counteract this problem, natural selection has favored the evolution of an overflow, similar to that of a bathroom sink - a small gap in the _____allows excess water to flow out of the pitcher.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

25. _____or any of various insectivorous plants of the genera Sarracenia, Nepenthes, or Darlingtonia, have pitcher-like leaves that attract and trap insects.
A. Heliamphora
B. Pitcher trap
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

26. In these insectivorous plants, the leaves form deep cups or _____ in which water collects.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

27. Visiting insects, falling into this water, are drowned and digested by the action of enzymes secreted by cells located in the walls of the _____structures of these plants.
A. Heliamphora
B. Pitcher-like
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

28. Often these plants _____. The end of a tendril may develop into a pitcher, which captures and digests insects.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

29. Sarracenia purpurea better known as _____, commonly found on the east coast of the US.
A. Heliamphora
B. Pitchers
C. Purple Pitcher Plant
D. Action of enzymes
E. None of the Above

30. Only use distilled water, reverse osmosis or rain water for your _____and other carnivores.
A. Heliamphora
B. Pitcher plants
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

31. Heliamphora is a member of the _____, a New World family in the order Ericales (heathers and allies).
A. Heliamphora
B. Pitchers
C. Sarraceniaceae
D. Action of enzymes
E. None of the Above

32. Heliamphora is limited to South America, but the family contains two other genera, _____ and Darlingtonia, which are endemic to Florida and California respectively. S. purpurea subsp. purpurea (the northern pitcher plant) has a more cosmopolitan distribution, found as far north as Canada.
A. Heliamphora
B. Sarracenia
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

33. _____ is the pitcher plant genus most commonly encountered in cultivation, because it is relatively hardy and easy to grow.
A. Heliamphora
B. Sarracenia
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

34. Pitcher plants: Any carnivorous plant with pitcher-, trumpet-, _____. Several families include pitcher plants: Nepenthaceae (Old World pitcher plants), Cephalotaceae, Asclepiadaceae (milkweed family), and especially Sarraceniaceae (New World pitcher plants, particularly those in the eastern North American genus Sarracenia).
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

35. Pitcher plants inhabit bogs, swamps, wet or sandy meadows, _____are water-saturated, acidic, and deficient in nitrates or phosphates.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

36. Their unusual tubular leaves have a series _____that extend from the lip down into the interior and attract insects.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

37. Once in the plant, the prey tumbles down into a liquid pool and drowns, after which _____within the leaf digests it, releasing nitrates and other nutrients, which supplement the meager nutrient supply of bogs.
A. Or savannas where the soils
B. An enzyme secreted
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

38. Most pitcher plants _____, insect-catching leaves in the spring and tubeless leaves in the fall. Their flowers are showy and have an agreeable scent.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Produce pitcher-shaped
D. Of pitcher overflow
E. None of the Above

39. In the genus Sarracenia, the problem of pitcher overflow is solved by an operculum, which is essentially a flared leaflet that covers the opening _____, and protects it from rain.
A. Or savannas where the soils
B. Of the rolled-leaf tube
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

40. Sarracenia species secrete enzymes such as proteases and phosphatases into the digestive fluid at the bottom of the pitcher; Heliamphora relies _____.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. On bacterial digestion alone
D. Of pitcher overflow
E. None of the Above

41. The enzymes digest the proteins and nucleic acids in the prey, _____and phosphate ions, which the plant absorbs.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Of nectar-secreting glands
D. Releasing amino acids
E. None of the Above

42. Darlingtonia californica, the _____, possesses an adaptation also found in Sarracenia psittacina and to a lesser extent in Sarracenia minor: the operculum is balloon-like, and almost seals the opening to the tube.
A. Cobra plant
B. Hooded Picher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

43. Sarracenia minor also known as the _____, is found in the southeastern US.
A. 'Fish tails'
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

44. This balloon-like chamber is pitted with _____, chlorophyll-free patches through which light can penetrate.
A. Areolae
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

45. Insects, mostly ants, enter the chamber via the opening underneath the balloon. Once inside, they tire themselves trying to escape from these _____, until they eventually fall into the tube.
A. False exits
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

46. Prey access is increased by the _____, outgrowths of the operculum that give the plant its name. Some seedling Sarracenia species also have long, overhanging opercular outgrowths; Darlingtonia may therefore represent an example of neoteny.
A. 'Fish tails'
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

Nepenthes
47. The second major group of pitcher plants are the monkey cups or tropical pitcher plants of the genus _____.
A. 'Fish tails'
B. Picher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

48. In the hundred or so species of this genus, the _____is born at the end of a tendril, which grows as an extension to the midrib of the leaf.
A. 'Fish tails'
B. Pitcher
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

49. Most species catch insects, although the larger ones, particularly _____, also occasionally take small mammals and reptiles.
A. 'Fish tails'
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

50. These _____ represent a convenient source of food to small insectivores.
A. Pitfall trap
B. Pitchers
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

51. N. bicalcarata possesses two sharp thorns that project from the base of the operculum over the entrance to the _____, providing some protection from raids by freeloading mammals.
A. Pitfall trap
B. Pitcher
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

52. The _____has evolved independently in at least two other groups.
A. Pitfall trap
B. Pitcher Plant
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

53. The Albany pitcher plant _____is a small pitcher plant from Western Australia, with moccasin-like pitchers.
A. Pitfall trap
B. Pitcher Plant
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

54. The rim of its _____ opening (the peristome) is particularly pronounced (both secrete nectar) and provides a thorny overhang to the opening, preventing trapped insects from climbing out.
A. Pitfall trap
B. Pitcher's
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

55. The lining of most _____is covered in a loose coating of waxy flakes, which are slippery for insects, prey that are often attracted by nectar bribes secreted by the peristome, and by bright flower-like anthocyanin patterning.
A. Pitfall trap
B. Pitcher plants
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

56. _____, the nectar bribe is laced with coniine, a toxic alkaloid also found in hemlock, which probably increases the efficiency of the traps by intoxicating prey.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

57. _____, also known as Yellow Trumpet Plant, is commonly found throughout the southeast US.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

58. _____are most colorful near their mouths to ensure the insects notice and are drawn to that area.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Trumpets
E. None of the Above

Bromeliads

59. The final carnivore with a pitfall-like trap is the bromeliad, _____. Like most relatives of the pineapple, the tightly-packed, waxy leaf bases of the strap-like leaves of this species form an urn.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Brocchinia reducta
E. None of the Above

60. In most bromeliads, water collects readily in this urn, and may provide habitats for frogs, insects and more usefully for the plant, _____.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

61. In Brocchinia, the urn is a specialized insect trap, with a loose, waxy lining and a population of digestive _____.
A. Pineapple
B. Bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

62. _____ is a large family of flowering plants native to the tropical and warm temperate New World.
A. Bromeliaceae (the bromeliads)
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

63. The family includes both epiphytes, such as _____, and ground (terrestrial) plants, such as the pineapple Ananas comosus.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

64. Many _____ are able to store water in a "tank" formed by their tightly-overlapping leaf bases.
A. Bromeliads
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

65. The family is diverse enough to include the tank bromeliads, grey-leaved epiphytic _____ species which gather water only from leaf structures called trichomes, and a large number of desert-dwelling succulents.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Tillandsia
D. Puya raimondii
E. None of the Above

66. The largest bromeliad is _____, which reaches 3–4 m tall in vegetative growth with a flower spike 9–10 m tall, and the smallest is probably Spanish moss.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

Where they Grow
67. _____are a Neotropical family which means they grow virtually exclusively in the New World tropics (and subtropics).
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

68. _____ altitude range is from sea level to over 14,000 feet.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

69. _____ can be found in a wide variety of habitats from hot, dry deserts to moist rainforests to cool mountainous regions.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

70. _____are found in a variety of growing situations: Terrestrial species are found growing in the ground (the way we expect most plants to grow).
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

71. They may be found growing in bright sun along _____of a forest among the leaf litter and debris.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

72. _____are found growing on rocks. They may grow on hard rocky outcrops where their roots may penetrate cracks and fissures to locate moisture or organic nutrients or sometimes they are found growing tenuously on sheer cliff faces.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

73. _____are found growing on other plants, usually trees, shrubs or cactus but sometimes they can be found on telephone poles or even on the telephone lines themselves. This capability to take their nutrition and moisture from the atmosphere has earned these bromeliads the name "Air Plants".
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

How They Grow
74. All bromeliads are composed of a spiral arrangement of leaves sometimes called a " _____".
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

75. The number of degrees between _____ varies from species to species with a few having a 180 degree separation between leaves.
A. Epiphytic species
B. Successive leaves
C. Bromeliads
D. Rosette
E. None of the Above

76. This causes the plant to grow in a flattened configuration with its leaves lined up in a single plane. The bases of the leaves in the _____ may overlap tightly to form a water reservoir.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

77. This central cup also collects whatever leaf litter and insects happen to land in it. The more ancestral terrestrial _____ do not have this water storage capability and rely primarily on their roots for water and nutrient absorption.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

Tank Bromeliads

78. Tank bromeliads (as the water storing species are often called) rely less heavily on their roots for nourishment and are more often found as _____.
A. Epiphytes
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

79. The roots of _____harden off after growing to form holdfasts as strong as wire that help attach the plant to its host.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

80. Even though bromeliads are commonly called _____ in Spanish-speaking countries, these epiphytes do not take sustenance from their host but merely use it for support.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

81. In some species, the bases of the leaves form small chambers as they overlap; these protected spaces are often home to ants. In exchange for _____, the ants' waste may provide the bromeliad with extra fertilizer.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

82. Certain _____, members of the bromeliad family, do the exact opposite of most flowers by opening their flowers at night and closing them during the day to protect them from weevils, which are most active during daylight hours.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

83. All _____ share a common characteristic: tiny scales on their leaves called trichomes.
A. Epiphytic species
B. Patterns and banding
C. Parasitos
D. Bromeliads
E. None of the Above

84. These scales serve as a very _____. In species found in desert regions where the air is hot and dry and the sun beats down relentlessly, these scales also help the plant to reduce water loss and shield the plants from the solar radiation.
A. Center of the rosette
B. Efficient absorption system
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

85. These plants are covered with many scales that they appear _____.
A. Center of the rosette
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

86. On many species (especially in more humid areas), the scales are smaller and less noticeable. Sometimes the scales can form _____on the leaves that add to the plant's beauty.
A. Center of the rosette
B. Patterns and banding
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

Flower Stalk
87. With few exceptions, the flower stalk is produced from the _____.
A. Center of the rosette
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

88. The stalk (or _____ as it is called), may be long with the flowers held far away from the plant (either erect or hanging pendantly) or the scape may be short with the flowers nestled in the rosette.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

89. The scape may produce a single flower or many individual flowers and may have colorful leaf-like appendages called _____bracts that serve to attract pollinators and delight bromeliad enthusiasts.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

90. With rare exceptions, bromeliads only flower a single time - once the plant stops producing leaves and produces its flower, it will not start making leaves again. It will, however, vegetatively produce new plantlets called "_____" or "pups".
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

91. These plants will feed off the "_____" plant until they are large enough to set roots of their own and survive as a separate plant.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

92. The _____ may sometimes survive a generation or two before finally dying off. Pups are usually produced near the base of the plant - inside the sheath of a leaf.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

93. Sometimes, pups may be produced on long stolons or atop the inflorescence (flower spike) of the _____ plant. The green, leafy top of a pineapple is in fact a pup that may be removed and planted to start a new plant.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

94. _____are particularly suited to rainforest environments.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

95. They are _____ in that they often cling onto and climb up the outside of trees and tree stumps, but they gain most of their nutrients not from the roots, but from the reservoir of water and detritus stored in the middle of the leaf well.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. None of the Above

96. _____ can store water for an incredible length of time, enabling them to survive lengthy periods of drought.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

97. Inflorescence: The flowers of a bromeliad are grouped into an inflorescence. This usually appears 4-6 years after germination and occupies a terminal position on the _____.
A. Inflorescence
B. Rosette
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

98. Bromeliad flowers tend to be short-lived, but most species possess colorful modified leaves called _____that last for a much longer time.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

99. Bromeliad _____ attract a range of animals for pollination including hummingbirds, bats, moths and butterflies.
A. Inflorescences
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

100. Bromeliads colorful _____have also led to the popularity of bromeliads as ornamental plants. The basal bloomless part of the inflorescence is known as the scape. The scape usually bears scape bracts in a loose arrangement.
A. Inflorescences
B. Bromeliads
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

You are finished with your assignment. Please fax this answer key, registration page and customer survey to TLC.

We will require a photocopy of your driver's license.

Fax Number (928) 272-0747

Always call us after faxing the paperwork to ensure that we've received it. Allow two weeks for processing and for the proper DPR forms to be sent back to you. If you need this course graded and your certificate sooner, add a $50.00 rush fee. This may not include postage charges. **Thank you for your business**

Carnivorous Plant Identification and Cultivation
Assignment #3 Last Names Q-Z

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 70 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 272-0747. This assignment is available to you in a Word Format on TLC's Website. You can find online assistance for this course on the in the Search function on Adobe Acrobat PDF to help find the answers. Once you have paid the course fee, you will be provided complete course support from Student Services (928) 468-0665.

Write your answers on the Answer Key found in the front of this assignment.

If you are a California DPR or Nevada student, things have changed and we had to implement new security features to keep those agencies happy.
1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.

2. You will need to pick one of the following three assignments to complete. This selection process is based upon your last name. If your last name begins with an A to G, you will pick assignment number 1, if your last name begins with the letter H to P, you are to complete assignment number 2 and if your last name begins with the letter Q-Z, you will pick assignment number 3.

1. Leaves: Tank bromeliads possess specialized epidermal hairs modified for absorption (called _____) on the inner side of their leaf bases.
A. Inflorescence
B. Trichomes
C. Epiphytes
D. 'Floral bracts'
E. None of the Above

2. The _____ absorb water and dissolved nutrients impounded within the rosette. The leaves posses a waxy cuticle and are sometimes equipped with spines, which probably discourage herbivory.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. Trichomes
E. None of the Above

3. Roots: The roots of most tank bromeliads are structurally and functionally reduced. Their main purpose is to anchor the _____ to its host.
A. Inflorescence
B. Bromeliad
C. Epiphytes
D. Trichomes
E. None of the Above

4. Offshoots: In addition to seed production, bromeliads reproduce vegetatively by producing offshoots that grow between the axils of the _____.
A. Inflorescence
B. Bromeliads
C. Epiphytes
D. Basal leaves
E. None of the Above

5. The plant produces _____ that help it digest its prey.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

6. Carnivorous plants usually grow in places where the soil is thin or poor in _____, especially nitrogen, such as acidic bogs and rock outcroppings.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Nutrients
E. None of the Above

7. True carnivory is thought to have evolved in at least 10 separate lineages of plants, and these are now represented by more than a _____in 5 families.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Dozen genera
E. None of the Above

8. Five basic _____are found in carnivorous plants.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Trapping mechanisms
E. None of the Above

9. Pitfall traps (pitcher plants) trap prey in a rolled leaf that contains a pool of digestive _____ or bacteria.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

10. Flypaper traps use a _____.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

11. _____utilize rapid leaf movements.
A. Enzymes
B. Snap traps
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

12. _____suck in prey with a bladder that generates an internal vacuum.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Bladder traps
E. None of the Above

13. Lobster-pot traps force prey to move towards a _____with inward pointing hairs.
A. Enzymes
B. Digestive organ
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

14. These traps may be _____, depending on whether movement aids the capture of prey.
A. Enzymes
B. Active or passive
C. Sticky mucilage
D. Lobster-pot traps
E. None of the Above

15. Triphyophyllum is a passive flypaper that _____, but whose leaves do not grow or move in response to prey capture.
A. Enzymes
B. Protozoans
C. Secretes mucilage
D. Lobster-pot traps
E. None of the Above

16. Sundews are active flypapers whose leaves undergo rapid growth, aiding in the _____of prey.
A. Enzymes
B. Protozoans
C. Sticky mucilage
D. Retention and digestion
E. None of the Above

2 Major Groups
17. _____may be subdivided into 2 major groups; those with passive traps and those with active traps. For some of these traps, the actual method of insect decomposition involves digestive enzymes produced by the plant and bacterial decay within the trap.
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

18. A classic passive trap is the "pitfall trap" of pitcher plants, including Darlingtonia and Sarracenia of the _____, and Nepenthes of the Nepenthaceae, where an insect falls into a vase-like modified leaf.
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

19. Downward-pointing hairs on the slippery walls prevent the insect from crawling out, and the hapless victim ultimately drowns in a _____at the bottom.
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

20. Other well-known passive traps are the "flypaper" or adhesive traps of sundews (_____) and butterworts (Pinguicula, Lentibulariaceae).
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

21. In both of these unrelated genera, the leaves are covered with sticky, gland-tipped hairs (Drosera) or a sticky (viscid) layer of mucilage (_____) which entangle the hopeless, struggling victim.
A. Drosera, Droseraceae
B. Sarraceniaceae
C. Pinguicula
D. Carnivorous plants
E. None of the Above

Pitfall Traps
22. Pitfall traps are thought to have evolved independently on at least four occasions. The simplest ones are probably those of _____, the sun pitcher plant. In this genus, the traps are clearly derived evolutionarily from a simple rolled leaf whose margins have sealed together.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

23. These plants live in areas of high rainfall in South America such as Mount Roraima, and consequently have a problem ensuring their _____ do not overflow.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

24. To counteract this problem, natural selection has favored the evolution of an overflow, similar to that of a bathroom sink - a small gap in the _____allows excess water to flow out of the pitcher.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

25. _____or any of various insectivorous plants of the genera Sarracenia, Nepenthes, or Darlingtonia, have pitcher-like leaves that attract and trap insects.
A. Heliamphora
B. Pitcher trap
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

26. In these insectivorous plants, the leaves form deep cups or _____ in which water collects.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

27. Visiting insects, falling into this water, are drowned and digested by the action of enzymes secreted by cells located in the walls of the _____structures of these plants.
A. Heliamphora
B. Pitcher-like
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

28. Often these plants _____. The end of a tendril may develop into a pitcher, which captures and digests insects.
A. Heliamphora
B. Pitchers
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

29. Sarracenia purpurea better known as _____, commonly found on the east coast of the US.
A. Heliamphora
B. Pitchers
C. Purple Pitcher Plant
D. Action of enzymes
E. None of the Above

30. Only use distilled water, reverse osmosis or rain water for your _____and other carnivores.
A. Heliamphora
B. Pitcher plants
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

31. Heliamphora is a member of the _____, a New World family in the order Ericales (heathers and allies).
A. Heliamphora
B. Pitchers
C. Sarraceniaceae
D. Action of enzymes
E. None of the Above

32. Heliamphora is limited to South America, but the family contains two other genera, _____ and Darlingtonia, which are endemic to Florida and California respectively. S. purpurea subsp. purpurea (the northern pitcher plant) has a more cosmopolitan distribution, found as far north as Canada.
A. Heliamphora
B. Sarracenia
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

33. _____ is the pitcher plant genus most commonly encountered in cultivation, because it is relatively hardy and easy to grow.
A. Heliamphora
B. Sarracenia
C. Climb by tendrils
D. Action of enzymes
E. None of the Above

34. Pitcher plants: Any carnivorous plant with pitcher-, trumpet-, _____. Several families include pitcher plants: Nepenthaceae (Old World pitcher plants), Cephalotaceae, Asclepiadaceae (milkweed family), and especially Sarraceniaceae (New World pitcher plants, particularly those in the eastern North American genus Sarracenia).
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

35. Pitcher plants inhabit bogs, swamps, wet or sandy meadows, _____are water-saturated, acidic, and deficient in nitrates or phosphates.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

36. Their unusual tubular leaves have a series _____that extend from the lip down into the interior and attract insects.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

37. Once in the plant, the prey tumbles down into a liquid pool and drowns, after which _____within the leaf digests it, releasing nitrates and other nutrients, which supplement the meager nutrient supply of bogs.
A. Or savannas where the soils
B. An enzyme secreted
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

38. Most pitcher plants _____, insect-catching leaves in the spring and tubeless leaves in the fall. Their flowers are showy and have an agreeable scent.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Produce pitcher-shaped
D. Of pitcher overflow
E. None of the Above

39. In the genus Sarracenia, the problem of pitcher overflow is solved by an operculum, which is essentially a flared leaflet that covers the opening _____, and protects it from rain.
A. Or savannas where the soils
B. Of the rolled-leaf tube
C. Of nectar-secreting glands
D. Of pitcher overflow
E. None of the Above

40. Sarracenia species secrete enzymes such as proteases and phosphatases into the digestive fluid at the bottom of the pitcher; Heliamphora relies _____.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. On bacterial digestion alone
D. Of pitcher overflow
E. None of the Above

41. The enzymes digest the proteins and nucleic acids in the prey, _____and phosphate ions, which the plant absorbs.
A. Or savannas where the soils
B. Or urn-shaped leaves
C. Of nectar-secreting glands
D. Releasing amino acids
E. None of the Above

42. Darlingtonia californica, the _____, possesses an adaptation also found in Sarracenia psittacina and to a lesser extent in Sarracenia minor: the operculum is balloon-like, and almost seals the opening to the tube.
A. Cobra plant
B. Hooded Picher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

43. Sarracenia minor also known as the _____, is found in the southeastern US.
A. 'Fish tails'
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

44. This balloon-like chamber is pitted with _____, chlorophyll-free patches through which light can penetrate.
A. Areolae
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

45. Insects, mostly ants, enter the chamber via the opening underneath the balloon. Once inside, they tire themselves trying to escape from these _____, until they eventually fall into the tube.
A. False exits
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

46. Prey access is increased by the _____, outgrowths of the operculum that give the plant its name. Some seedling Sarracenia species also have long, overhanging opercular outgrowths; Darlingtonia may therefore represent an example of neoteny.
A. 'Fish tails'
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

Nepenthes
47. The second major group of pitcher plants are the monkey cups or tropical pitcher plants of the genus _____.
A. 'Fish tails'
B. Picher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

48. In the hundred or so species of this genus, the _____is born at the end of a tendril, which grows as an extension to the midrib of the leaf.
A. 'Fish tails'
B. Pitcher
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

49. Most species catch insects, although the larger ones, particularly _____, also occasionally take small mammals and reptiles.
A. 'Fish tails'
B. Hooded Pitcher Plant
C. Nepenthes
D. Midrib of the leaf
E. None of the Above

50. These _____ represent a convenient source of food to small insectivores.
A. Pitfall trap
B. Pitchers
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

51. N. bicalcarata possesses two sharp thorns that project from the base of the operculum over the entrance to the _____, providing some protection from raids by freeloading mammals.
A. Pitfall trap
B. Pitcher
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

52. The _____has evolved independently in at least two other groups.
A. Pitfall trap
B. Pitcher Plant
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

53. The Albany pitcher plant _____is a small pitcher plant from Western Australia, with moccasin-like pitchers.
A. Pitfall trap
B. Pitcher Plant
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

54. The rim of its _____ opening (the peristome) is particularly pronounced (both secrete nectar) and provides a thorny overhang to the opening, preventing trapped insects from climbing out.
A. Pitfall trap
B. Pitcher's
C. Nepenthes
D. Cephalotus follicularis
E. None of the Above

55. The lining of most _____is covered in a loose coating of waxy flakes, which are slippery for insects, prey that are often attracted by nectar bribes secreted by the peristome, and by bright flower-like anthocyanin patterning.
A. Pitfall trap
B. Pitcher plants
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

56. _____, the nectar bribe is laced with coniine, a toxic alkaloid also found in hemlock, which probably increases the efficiency of the traps by intoxicating prey.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

57. _____, also known as Yellow Trumpet Plant, is commonly found throughout the southeast US.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Yellow Trumpet Plant
E. None of the Above

58. _____are most colorful near their mouths to ensure the insects notice and are drawn to that area.
A. Pitfall trap
B. Sarracenia flava
C. Nepenthes
D. Trumpets
E. None of the Above

Bromeliads

59. The final carnivore with a pitfall-like trap is the bromeliad, _____. Like most relatives of the pineapple, the tightly-packed, waxy leaf bases of the strap-like leaves of this species form an urn.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Brocchinia reducta
E. None of the Above

60. In most bromeliads, water collects readily in this urn, and may provide habitats for frogs, insects and more usefully for the plant, _____.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

61. In Brocchinia, the urn is a specialized insect trap, with a loose, waxy lining and a population of digestive _____.
A. Pineapple
B. Bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

62. _____ is a large family of flowering plants native to the tropical and warm temperate New World.
A. Bromeliaceae (the bromeliads)
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

63. The family includes both epiphytes, such as _____, and ground (terrestrial) plants, such as the pineapple Ananas comosus.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

64. Many _____ are able to store water in a "tank" formed by their tightly-overlapping leaf bases.
A. Bromeliads
B. Diazotrophic (nitrogen-fixing) bacteria
C. Spanish moss Tillandsia usneoides
D. Puya raimondii
E. None of the Above

65. The family is diverse enough to include the tank bromeliads, grey-leaved epiphytic _____ species which gather water only from leaf structures called trichomes, and a large number of desert-dwelling succulents.
A. Pineapple
B. Diazotrophic (nitrogen-fixing) bacteria
C. Tillandsia
D. Puya raimondii
E. None of the Above

66. The largest bromeliad is _____, which reaches 3–4 m tall in vegetative growth with a flower spike 9–10 m tall, and the smallest is probably Spanish moss.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

Where they Grow
67. _____are a Neotropical family which means they grow virtually exclusively in the New World tropics (and subtropics).
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

68. _____ altitude range is from sea level to over 14,000 feet.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

69. _____ can be found in a wide variety of habitats from hot, dry deserts to moist rainforests to cool mountainous regions.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

70. _____are found in a variety of growing situations: Terrestrial species are found growing in the ground (the way we expect most plants to grow).
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

71. They may be found growing in bright sun along _____of a forest among the leaf litter and debris.
A. Pineapple
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

72. _____are found growing on rocks. They may grow on hard rocky outcrops where their roots may penetrate cracks and fissures to locate moisture or organic nutrients or sometimes they are found growing tenuously on sheer cliff faces.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

73. _____are found growing on other plants, usually trees, shrubs or cactus but sometimes they can be found on telephone poles or even on the telephone lines themselves. This capability to take their nutrition and moisture from the atmosphere has earned these bromeliads the name "Air Plants".
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Puya raimondii
E. None of the Above

How They Grow
74. All bromeliads are composed of a spiral arrangement of leaves sometimes called a " _____".
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

75. The number of degrees between _____ varies from species to species with a few having a 180 degree separation between leaves.
A. Epiphytic species
B. Successive leaves
C. Bromeliads
D. Rosette
E. None of the Above

76. This causes the plant to grow in a flattened configuration with its leaves lined up in a single plane. The bases of the leaves in the _____ may overlap tightly to form a water reservoir.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

77. This central cup also collects whatever leaf litter and insects happen to land in it. The more ancestral terrestrial _____ do not have this water storage capability and rely primarily on their roots for water and nutrient absorption.
A. Epiphytic species
B. Saxicolous species
C. Bromeliads
D. Rosette
E. None of the Above

Tank Bromeliads

78. Tank bromeliads (as the water storing species are often called) rely less heavily on their roots for nourishment and are more often found as _____.
A. Epiphytes
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

79. The roots of _____harden off after growing to form holdfasts as strong as wire that help attach the plant to its host.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

80. Even though bromeliads are commonly called _____ in Spanish-speaking countries, these epiphytes do not take sustenance from their host but merely use it for support.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

81. In some species, the bases of the leaves form small chambers as they overlap; these protected spaces are often home to ants. In exchange for _____, the ants' waste may provide the bromeliad with extra fertilizer.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

82. Certain _____, members of the bromeliad family, do the exact opposite of most flowers by opening their flowers at night and closing them during the day to protect them from weevils, which are most active during daylight hours.
A. Epiphytic species
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

83. All _____ share a common characteristic: tiny scales on their leaves called trichomes.
A. Epiphytic species
B. Patterns and banding
C. Parasitos
D. Bromeliads
E. None of the Above

84. These scales serve as a very _____. In species found in desert regions where the air is hot and dry and the sun beats down relentlessly, these scales also help the plant to reduce water loss and shield the plants from the solar radiation.
A. Center of the rosette
B. Efficient absorption system
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

85. These plants are covered with many scales that they appear _____.
A. Center of the rosette
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

86. On many species (especially in more humid areas), the scales are smaller and less noticeable. Sometimes the scales can form _____on the leaves that add to the plant's beauty.
A. Center of the rosette
B. Patterns and banding
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

Flower Stalk
87. With few exceptions, the flower stalk is produced from the _____.
A. Center of the rosette
B. Silvery-white and feel fuzzy
C. Parasitos
D. Bat-pollinated wild pineapples
E. None of the Above

88. The stalk (or _____ as it is called), may be long with the flowers held far away from the plant (either erect or hanging pendantly) or the scape may be short with the flowers nestled in the rosette.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

89. The scape may produce a single flower or many individual flowers and may have colorful leaf-like appendages called _____bracts that serve to attract pollinators and delight bromeliad enthusiasts.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

90. With rare exceptions, bromeliads only flower a single time - once the plant stops producing leaves and produces its flower, it will not start making leaves again. It will, however, vegetatively produce new plantlets called "_____" or "pups".
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

91. These plants will feed off the "_____" plant until they are large enough to set roots of their own and survive as a separate plant.
A. Center of the rosette
B. Mother
C. Offsets
D. Scape
E. None of the Above

Flypaper Traps
92. The flypaper trap is based on a sticky mucilage, or glue. The leaf of flypaper traps is studded with _____, which may be short and nondescript (like those of the butterworts), or long and mobile (like those of many sundews).
A. Mucilage-secreting glands
B. Extremely effective trap
C. Directional response
D. Coiling that occurs
E. None of the Above

93. Pinguicula moranensis known as the Mexican Butterwort. Found in Mexico. Butterworts release their _____only when an insect has been caught.
A. Mucilage-secreting glands
B. Extremely effective trap
C. Digestive enzymes
D. Coiling that occurs
E. None of the Above

94. In the genus Pinguicula, the _____are quite short (sessile), and the leaf, while shiny (giving the genus its common name of 'butterwort'), does not appear carnivorous.
A. Mucilage glands
B. Extremely effective trap
C. Directional response
D. Coiling that occurs
E. None of the Above

95. The leaf is an _____of small flying insects (such as fungus gnats), whose surface responds to prey by relatively rapid growth.
A. Mucilage-secreting glands
B. Extremely effective trap
C. Directional response
D. Coiling that occurs
E. None of the Above

96. This thigmotropic growth may involve rolling of the leaf blade (to prevent rain from splashing the prey off the leaf surface), or '_____' of the surface under the prey, to form a shallow digestive pit.
A. Mucilage-secreting glands
B. Dishing
C. Directional response
D. Coiling that occurs
E. None of the Above

Thigmotropism
97. Thigmotropism is the _____of a plant organ to touch or physical contact with a solid object.
A. Mucilage-secreting glands
B. Extremely effective trap
C. Directional response
D. Coiling that occurs
E. None of the Above

98. This _____is generally caused by the induction of some pattern of differential growth.
A. Mucilage-secreting glands
B. Extremely effective trap
C. Directional response
D. Coiling that occurs
E. None of the Above

99. This phenomenon is clearly illustrated by the _____of some plants, such as the sweet pea.
A. Mucilage-secreting glands
B. Extremely effective trap
C. Climbing tendrils
D. Coiling that occurs
E. None of the Above

100. The tendrils actually "feel" the solid object, which results in the _____ response.
A. Mucilage-secreting glands
B. Extremely effective trap
C. Directional response
D. Coiling
E. None of the Above

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