

NAME: _____

1. For tree species from the **Boreal/Central Region**, list the Genus and specific epithet of each described below (1 point if full name is correct, 8 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. The fruit of this species gives it the moniker 'king' due to the thickness of the husk.		
B. This deciduous gymnosperm is used to make the runners on dog sleds.		
C. This prodigious stump sprouter is a short-lived early successional species that does well in disturbed areas.		
D. Poor form and butt swell caused by chestnut blight are key ID features for this angiosperm.		
E. This dry-sited gymnosperm has needles borne on raised woody pegs and is an important timber species.		
F. This ubiquitous circumboreal species is used to flavor gin.		
G. This simple, alternate leaf has a unique taste, while the flowers are used to produce a high-value honey.		
H. Also called oilnut, this species is used to produce candy, to flavor coffee, and as pulpwood.		

2. For tree species from the **Northern Region**, list the Genus and specific epithet of each described below (1 point if full name is correct, 10 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. Once a dominant species in the Southern Appalachians, this species was wiped out by a disease in the early 1900's.		
B. This southern Appalachian gymnosperm has cones with protruding bracts that disintegrate on the tree.		
C. This gymnosperm is a poor self pruner but makes for a decent Christmas tree when grown in East Texas.		
D. This coastal gymnosperm can be found from Maine to central Florida, and is endangered due to development.		
E. The curving small cones of this gymnosperm are serotinous, and this fire dependent species grows in monocultures.		
F. This gymnosperm has needles in fascicles of two, but can suffer early mortality due to girdling by snowshoe hares.		
G. The green patterned bark, 3-lobed leaf, and wildlife browse preference each give this species a different common name.		
H. The aggregate of follicles found on this angiosperm gives it its common name.		
I. This uni-nodal gymnosperm with 5+ inch cones makes excellent ship's masts, causing violence in colonial America.		

_____ points

3. For tree species from the **High Elevation Region**, list the Genus and specific epithet of each described below (1 point if full name is correct, 10 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. This gymnosperm, found immediately below treeline, is shade tolerant and can be regenerated by clearcutting.		
B. This gymnosperm is found only in CO and NM, and can live for almost 2500 years in extremely harsh conditions.		
C. This species is likely to dramatically decrease in extent by 2090 due to climate change and blister rust.		
D. This hybrid is most common in California.		
E. This species, found at 3200-5600 feet in the Cascades is shade intolerant and can be managed with by shelterwood.		
F. This gymnosperm is protected in Nevada for use as Christmas trees, and has needles that curve like a rib cage.		
G. This gymnosperm has the largest cones of any member of its genus in the world.		
H. One of the oldest known members of this species was cut down by a grad student with permission of the USDA FS.		
I. Used to make guitars, this species with needles on raised woody pegs ranges from British Columbia down to NM.		

4. For tree species from the **Mid Elevation Region**, list the Genus and specific epithet of each described below (1 point if full name is correct, 8 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. A waxy bloom gives the needles of this gymnosperm their characteristic color, making it a popular ornamental.		
B. Also called paddle tree, this opposite angiosperm serves as forage for deer and elk.		
C. The specific epithet of this species is drawn from its form near the coast, which is nothing like its form further inland.		
D. This angiosperm can grow in large clonal stands.		
E. This angiosperm can be used to thicken soups, for firewood, or for fence posts, and thrives in dry scrubby habitats.		
F. This deciduous gymnosperm has bright yellow fall foliage and a very narrow crown.		
G. This common western species can live with as little as 16" of rain per year, and can survive for up to 600 years.		
H. With cones up to 12 inches in length and 5 needles per fascicle, this tree can live for more than 600 years.		

5. For tree species from the **Low/S. Pacific Region**, list the Genus and specific epithet of each described below (1 point if full name is correct, 10 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. This is the world's largest tree by volume.		
B. This gymnosperm only has one needle per fascicle.		
C. The large seeds of this gymnosperm, which has 2-3 needles per fascicle, are edible.		
D. The textured bark of this species, which can be found in west Texas, lends it its name.		
E. This is among the largest members of its genus in the world, but does not develop its 'arms' for the first 100 years.		
F. This species has the heaviest cone for its genus in the world, about the weight of a quart jar of maple syrup.		
G. This species comes from 3 small populations in CA, but has been planted all over the world.		
H. This riparian species can grow to enormous size, and looks quite similar to one species we learned in lab.		
I. Shipbuilders in the 18 th & 19 th centuries sought out the odd angular branches of this tree to make special joints.		

6. For tree species from the **North Pacific Region**, list the Genus and specific epithet of each described below (1 point if full name is correct, 8 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. Trees of this gymnosperm with large knots or injuries are more susceptible to pocket dry rot.		
B. This species is the missing link between Quercus and Castanea.		
C. This large gymnosperm is used in construction, cabinetry, and for tanning hides.		
D. This is the largest American member of its genus, and is grown in the west for quality paper production.		
E. This early successional angiosperm can fix large quantities of nitrogen into the soil.		
F. This gymnosperm grows along coastal mountains in southeastern Alaska, and has shreddy grayish bark.		
G. This is the most important plantation timber species in its region, and is easily identified by the cone's exerted bracts.		
H. This is the world's tallest living tree.		

7. For tree species from the **Europe or Asia**, list the Genus and specific epithet of each described below (1 point if full name is correct, 8 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. This gymnosperm with needles on raised woody pegs is an important timber species in Scandanavia.		
B. This monotypic gymnosperm is a broadleaf, deciduous tree.		
C. This species looks almost identical to its American counterpart but for the number of parallel veins on the leaf.		
D. This species is endangered in its Mediterranean habitat due to overharvesting to produce pipe from its lignotubers.		
E. This is now an ornamental in the US, and looks very similar to a native opposite species, other than its globose fruits.		
F. This species was brought into the US for production of timber by early settlers, and can be ID'd by orange bark.		
G. This species shades cellars used for aging beer in Germany.		
H. This was believed to be a valuable specialty wood, and was planted widely in the US South before it became invasive.		

8. For tree species from **SOUTH OF THE EQUATOR**, list the Genus and specific epithet of each described (1 point if full name is correct, 10 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. This species can grow in extremely harsh environments in Chile, but was given its common name by the British.		
B. This is the first commercial source of vitamin C, and was named for the captain who found it as a cure for scurvy.		
C. This red-fruited angiosperm is an extremely aggressive invasive exotic in south Florida.		
D. The uncanny symmetry of the crown of this south Pacific island tree makes it easy to identify from great distances.		
E. This is one of the world's most widely distributed hardwood plantation species, but originates in southeastern Australia.		
F. This is the world's tallest angiosperm.		
G. The cottony fibers in the seed pods of this species were used for a variety of purposes by indigenous South Americans.		
H. The light but strong wood of this species makes it ideal for various crafts.		
I. This species lent its name to the largest country on its continent.		

9. *Draw and label a SEED. (1 point each correctly labeled feature, 3 points total)*

10. *Draw and label a FLOWER. (1 point each correctly labeled feature, 5 points total)*

11. *Draw two trees, one with an excurrent form, and one with a decurrent form. (2 points total)*

EXCURRENT

DECURRENT

_____ points

12. *List 6 woody angiosperm species of your choosing. You must list species from at least 4 different genera. After listing your species, create an indented dichotomous key based upon LEAF morphology. (10 points total)*

13. List the best online resource to use for each of the following. (3 pts)

- A. Identifying an unknown woody species you found on vacation in the USA outside of the Western Gulf Region:
- B. Determining how many North American species are in the genus *Quercus*:
- C. Writing a technical report on the life history and biology of spruce pine:

14. Identify the following forms of variation or concepts related to variation. (5 pts)

- A. Phenotype = Genotype + Environment + G x E:
- B. A possible cause of albinism (no chlorophyll) in a leaf:
- C. Variation in phenotypes at opposite ends of a single species' range:
- D. Water oak leaves on a mature tree varying widely in their shape:
- E. Red mulberry leaves being more distinctly lobed in seedlings:

15. Give one example of a woody species that has each of the following fruit types. Either common or scientific names will be acceptable. If you can't think of species, at least try to list a genus, or the common name of a genus, such as 'pine' (1 point each, 5 points total)

Follicle: _____

Samara: _____

Legume: _____

Drupe: _____

Capsule: _____