

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. This angiosperm has rough bark resembling gator skin and is used for tanning leather in the southern Appalachians.		
B. Poor form and butt swell caused by chestnut blight are key ID features for this angiosperm.		
C. This angiosperm is a medium sized tree to 70 feet, often with several trunks and sticky terminal buds.		
D. The fruit of this species gives it the moniker 'king' due to the thickness of the husk.		
E. This dry-sited gymnosperm is an important timber species that smells like cat urine.		
F. This ubiquitous circumboreal species is used to flavor gin.		
G. This deciduous gymnosperm with needles borne on short shoots is often used for pulpwood.		
H. This angiosperm has bright red fall foliage, showy flowers in racemes, and is used for honey.		

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, 9 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. The serotinous cones of this species require fire to open on the xeric ridge tops where it grows.		
B. This gymnosperm found on high mountains in the northeast, and produces a useful, viscous, sticky resin.		
C. The aggregate of follicles found on this angiosperm gives it its common name.		
D. Once a dominant species in the Southern Appalachians, this species was wiped out by a disease in the early 1900's.		
E. The curving small cones of this gymnosperm are serotinous, and this fire dependent species grows in monocultures.		
F. This gymnosperm is a poor self pruner but makes for a decent Christmas tree when grown in East Texas.		
G. The green patterned bark, 3-lobed leaf, and wildlife browse preference each give this species a different common name.		
H. This uni-nodal gymnosperm with 5+ inch cones makes excellent ship's masts, causing violence in colonial America.		
I. This large tree infested with an invasive adelgid is being wiped out from streamside areas in the eastern mountains.		

_____ 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, 7 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. One of the oldest known members of this species was cut down by a grad student with permission of the USDA FS.		
B. This long-lived gymnosperm only has flecks on the needle, helping distinguish it from a similar tree.		
C. This gymnosperm with smooth bark is being impacted by blister rust, fire exclusion, and climate change.		
D. This gymnosperm with four-sided needles is used in light-weight home construction and musical instruments.		
E. This species with upward curving needles is used for ornamental landscaping and xmas trees.		
F. This species with upright cones that are 4-6 inches long can reach up to 190 feet in height, very large for its genus.		
G. This gymnosperm has the largest cones of any member of its genus in the world.		

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. This angiosperm's leaves turn yellow in the fall, and its fruits are toxic to livestock, but only in very high doses.		
B. This opposite angiosperm is used for specialty syrup production and is the second most commercially important hardwood timber species in its region.		
C. This deciduous gymnosperm has bright yellow fall foliage and a very narrow crown.		
D. This angiosperm can grow in large clonal stands.		
E. The specific epithet of this species is drawn from its form near the coast, which is nothing like its form further inland.		
F. The state tree of Idaho, is affected by a blister rust and is subject to high mortality rates as a result.		
G. This species is the tallest example of its genus in the world, including the Barnes Creek Survivor as one example.		
H. A waxy bloom gives the needles of this gymnosperm their characteristic color, making it a popular ornamental.		

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, 9 points total) Spelling can be creative, but don't push it.

Question	Genus	specific epithet
A. This is among the largest members of its genus in the world, but does not develop its 'arms' for the first 100 years.		
B. This gymnosperm only has one needle per fascicle.		
C. This large angiosperm has bark containing vitamin C, and is a valuable wildlife cover species.		
D. The textured bark of this species, which can be found in west Texas, lends it its name.		
E. This species comes from 3 small populations in CA, but has been planted all over the world.		
F. This species has the heaviest cone for its genus in the world.		
G. The world's largest tree, by volume.		
H. The large seeds of this gymnosperm, which has 2-3 needles per fascicle, are edible.		
I. The holly-like leaves of this angiosperm are as distinct as it's oddly elongated, bullet-shaped, fruits for the genus.		

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. This early successional angiosperm can fix large quantities of nitrogen into the soil.		
B. The leathery and coarsely toothed leaves of this angiosperm reveal it as a link between Quercus and Castanea.		
C. This is the world's tallest living tree.		
D. This is the largest American member of its genus, and has had its genome sequenced.		
E. This species is not susceptible to the adelgid that is decimating the other two members of its genus.		
F. This gymnosperm grows along coastal mountains in southeastern Alaska, and has shreddy grayish bark.		
G. Part of the genus of this tree means 'beautiful', while it's common name reveals a key wood property.		
H. This is the most important plantation timber species in its region, and is easily identified by the cone's exerted bracts.		

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 was believed to be a valuable specialty wood, and was planted widely in the US South before it became invasive.		
C. This species shades cellars used for aging beer in Germany.		
D. This species is endangered in its Mediterranean habitat due to overharvesting to produce pipe from its lignotubers.		
E. This monotypic gymnosperm is a broadleaf, deciduous tree.		
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 is now an ornamental in the US, and looks very similar to a native opposite species, other than its globose fruits.		
H. This species looks almost identical to its American counterpart but for the number of parallel veins on the leaf.		

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, 9 points total) Spelling can be creative, but don't push it.

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

9. *Draw and label a twig with a compound leaf and a flower growing from it. (1 point each correctly labeled feature, 16 points total)*

10. *List 6 woody angiosperm species of your choosing. You must list species from at least 5 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)

Multiple: _____

Follicle: _____

Legume: _____

Drupe: _____

Capsule: _____