**姓名：**

* 红色高亮：生词积累掌握
* 绿色：长难句分析 ////意群划分断句
* 黄色答案：正确答案
* **\_\_\_ 加粗下划线 特殊语法结构（非谓语等）**
* **结构标记词** prevent oneself from doing下划线表示短语

**Preventing Overgrowth among Tree Branches**

**Paragraph 1 Mariann(question) Arvin(question)William(word)Rita（summary） Cherry(sentence)**

**One way** trees prevent themselves from having too many branches is simply by shedding (dropping off) branches once they have fulfilled their purpose. This happens **as** the tree gets bigger and grows new outer layers of foliage (**that** shade the inner and lower branches). In most large trees, the center of the canopy contains only large branches, small branches and fine twigs are found only at the canopy’s edge. In the shaded center, the small branches (that would once have occupied(虚拟语气) that space) are long gone. Trees like the true cypresses regularly shed small twigs (complete with leaves) toward the end of summer. Most **other** trees shed only branches that prove unproductive. If a branch is not producing enough carbohydrate to cover its own running costs 【—i.e., it needs to be subsidized by other branches because, for example, it is being shaded and receives little light—】it will usually be got rid of. This prevents unproductive branches from being a drain on the tree and removes the wind drag (the force of air resistance) from useless branches.

* Shedding/casting/ drop off/ throw off 脱落
* Shade 阴影
* Drain: If you say that something is a drain on an organization's finances or resources, you mean that it costs the organization a large amount of money, and you do not consider that it is worth it.
* a drain/ drag on an organization 拖后腿/拖累
* Subsidize v subsidy n. 补贴
* Sb Get rid of 摆脱 rid sb of

1. All of the following situations are mentioned in paragraph 1 for a tree to shed its branches EXCEPT

A. endangering other branches

B. building up on a tree

C. wasting a tree’s resources

D. growing larger

2. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

A. A tree will usually shed branches that use more carbohydrate than they produce.

B. Branches that are shaded usually do not receive enough light to produce all the carbohydrate they need.

C. If a tree gets rid of a branch, it is usually because other branches lack enough carbohydrate to subsidize it.

D. If a branch is shaded and cannot produce as much carbohydrate as it needs, it will usually be subsidized by other branches.

3. According to paragraph 1 most twigs of the true cypresses would be arranged in which of the following manner

A. Most small twigs on true cypresses have been found located at the margins of the canopy.

B. The shaded center areas of true cypresses are generally occupied by many small twigs and branches.

C. True cypresses shed twigs that grow on large, unproductive branches.

D. True cypresses seasonally/regularly shed small twigs without regard to 不管/不顾whether they are productive or not.

Without regard to = regardless

Everyone should finish their homework regardless of/without regard to your problems.

**Paragraph 2 Nancy（句子） Richard（5&word） Peter（4&summary） Arato（6）**

Branches are shed for reasons **other than** lack of light. In dry parts of the world, it is common for trees and shrubs to lose smaller branches to save water. Small branches have the thinnest bark (the protective outer covering of a tree) and greatest surface area and thus are the source of most water loss once the leaves have been lost. The creosote杂酚油, 木馏油（木材防腐剂） bush of United States deserts self-prunes, or removes parts of itself, in the face of extreme heat or drought, **starting** from the highest and most **exposed** twigs and **working** downward to bigger and bigger branches; it’s a desperate act because if the creosote bush loses too much wood, it dies. Shedding branches can **also** be useful for self-propagation. Most poplar trees and willow trees (characteristic of waterways) will readily drop branches, which take root when **washed** up on muddy banks further downstream.

Desperate adj 绝望的 > despaired adj. 失望的（depressed adj）沮丧的

Propagate vt

Other than 不是；除了

Characteristic of 以…为特征

Such bluntness is **characteristic of** him. 他就是这麽迟钝.

I like CMU which is characteristic of geeks and experts.

21CIS is a high-school characteristic of stern and rigid academia.

Take root/settle

4. Which of the following best describes the role of the explanation offered in paragraph 2?

A. Paragraph 2 questions this explanation by providing counterexamples of some trees.

B. Paragraph 2 presents additional evidence supporting this explanation.

C. Paragraph 2 discusses some **additional** reasons why trees shed branches

D. Paragraph 2 points out some additional consequences for trees besides the shedding of branches

5. The word “exposed” in the passage is closet in meaning to

A. distant

B. unprotected

C. easily replaced

D. unproductive

6. According to paragraph 2, what is true of the creosote bush of United States deserts?

A. It tends to grow small branches during dry parts of the year.

B. It loses more water through its bark than through its leaves. [无中生有]

C. It loses its lower branches only after losing upper ones.

D. It sheds branches for the purpose of propagating itself.

**Paragraph 3 Jack Raven Gavin Loren**

**How are branches shed?** **In the simplest cases**, dead branches rot and fall off, or healthy branches are snapped off by wind, snow, and animals. Some willows have a brittle zone at the base of small branches that encourages breaking in the wind, seemingly for propagation. **Other cases** of “natural pruning” are more startling: elm trees, and to a certain extent others, such as oaks, have a reputation for dropping large branches (up to half a meter in diameter) with no warning on calm, hot afternoons. Such dramatic shedding appears to be due to a combination of internal water stress coupled with heat expansion **affecting** cracks and **decayed** wood.

7. The phrase “with no warning” in the passage is closest in meaning to

A. without any benefit

B. without any stress

C. without any indication beforehand

D. without any damage

8. All of the following are mentioned in paragraph 3 as a way in which branches can be lost EXCEPT:

A. being broken off by the wind

B. being shed for propagation

C. becoming rotten

D. becoming too large in diameter

9. Which of the following is mentioned in paragraph 3 in the shedding of large branches by oaks on calm, hot afternoons?

A. The development of a brittle zone at the base of the branches

B. The enlargement of cracks in the branches due to heat

C. The rise of sudden bursts of wind that snap off decayed wood

D. The seasonal need to propagate new trees

**Paragraph 4 Benny Iris Michael Louie**

Many trees**, however,** shed branches deliberately. In this situation, branches are shed in the same way as foliage in autumn by the prior formation of a corky layer that leaves the wound sealed over with cork, which in turn is undergrown with wood the following year. In hardwoods, branches up to a meter in length and several centimeters in diameter can be shed normally after the leaves have fallen in the autumn (maples are unusual in casting branches mainly in spring and early summer). Oaks tend to shed small twigs up to the thickness of a pencil, beech may shed larger ones, and birches dump whole branches of dead twigs. Pine trees shed their clusters of needles (which really are short branches), and members of the redwood family shed their small branchlets with leaves. Typically, in hardwood trees, something around 10 percent of terminal branches are lost each year through a mixture of deliberate shedding and being broken off.

Branchlet/ bracelet/ outlet/ booklet/ leaflet

Find all the diversity usage of “shed”:

10. According to paragraph 4, what information can be learned from the deliberate shedding of branches by the trees?

A. Limiting the size of branches being shed to comparatively small ones

B. Forming a new layer of wood to seal the wounded area immediately after shedding

C. Shedding leaves at the same time that branches are being shed

D. Forming a layer of protective tissue before branch shedding begins

**Paragraph 5 Christina Sabrina Lucas David**

**Another way** of reducing potential **congestion** is to make some branches smaller than others. Branches in the shade grow smaller than those in the sun. But trees can also regulate branch length from within. In many trees there is a clear distinction between long and short branches or shoots. The long shoots build the framework of the tree, **making** it bigger. The job of the short shoots (called spur shoots by horticulturalists园艺师) is to produce leaves, and commonly flowers, at more or less the same position every year. To maintain flexibility, any one shoot can switch from long to short or vice versa **depending on** internal factors, light levels, and damage.

11. The word “congestion” in the passage is closest in meaning to

A. loss

B. damage

C. overcrowding

D. stress

12. According to paragraph 5, what is the main purpose of the long branches or shoots?

A. To regulate the length of large branches

B. To increase the size of the tree

C. To produce leaves and flowers

D. To help create shaded areas

13. Look at the four squares [ ] that indicate where the following sentence can be added to the passage.

**A tree will also shed branches if its water supply is insufficient.**

Where would the sentence best fit? Click on a square [ ] to add the sentence to the passage.

Paragraphs 1-2

One way trees prevent themselves from having too many branches is simply by shedding (dropping off) branches once they have fulfilled their purpose. This happens as the tree gets bigger and grows new outer layers of foliage that shade the inner and lower branches. In most large trees, the center of the canopy contains only large branches, small branches and fine twigs are found only at the canopy’s edge. In the shaded center, the small branches that would once have occupied that space are long gone. Trees like the true cypresses regularly shed small twigs complete with leaves toward the end of summer. Most other trees shed only branches that prove unproductive. If a branch is not producing enough carbohydrate to cover its own running costs—i.e., it needs to be subsidized by other branches because, for example, it is being shaded and receives little light—it will usually be got rid of. This prevents unproductive branches from being a drain on the tree and removes the wind drag (the force of air resistance) from useless branches. [A]

Branches are shed for reasons other than lack of light. [B] In **dry** parts of the world, it is common for trees and shrubs to lose smaller branches to save water. [C] Small branches have the thinnest bark (the protective outer covering of a tree) and greatest surface area and thus are the source of most water loss once the leaves have been lost. [D] The creosote bush of United States deserts self-prunes, or removes parts of itself, in the face of extreme heat or drought, starting from the highest and most exposed twigs and working downward to bigger and bigger branches, it’s a desperate act because if the creosote bush loses too much food, it dies. Shedding branches can also be useful for self-propagation. Most poplar trees and willow trees characteristic of waterways will readily drop branches, which take root when washed up on muddy banks further downstream.

14. Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some answer choices do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. This question is worth 2 points.

Drag your choices to the spaces where they belong. To review the passage, click on View Text.

**For trees to remain healthy as they grow and as circumstances change, tree branches must change in various ways.**

Answer Choices

A. Trees can benefit from shedding inefficient branches that consume more carbohydrates than they produce or that are a major source of water loss.

B. Branches can be lost as a result of damage from weather, animals, or disease, but they can also be shed when they are no longer useful, much as leaves are shed in autumn.

C. While branch shedding is common and may be necessary for a tree’s survival, the ~~corky layer~~ that forms at sites where branches have been shed prevents additional growth in those areas for several years.

D. Shedding large branches is such a desperate act for survival that the ~~creosote bush~~ is one of the few plants to use this mechanism for removing wood.

E. Larger trees can self-propagate when water stress and heat expansion break off branches, as long as the shed branches fall on or can be transported to a location favorable for taking root. （PARA 2- Polar willow trees）

F. Trees prevent branch overcrowding in part by varying branch length through internal mechanisms such as having shoots that can switch from long to short or from short to long, as needed.

**Structure analysis.** (Write down the main idea of each paragraph or make a mind-map of the passage structure. The latter is preferred.)

Para 1:

Para 2:

Para 3:

Para 4:

Para 5:

1. **Vocabulary Bank**

|  |  |  |
| --- | --- | --- |
| shed | fulfill | foliage |
| canopy | cypress | unproductive |
| carbohydrate | subsidize | get rid of |
| drain | breeding | propagation |
| rot | Snap off | brittle |
| prune | deliberately | cluster |
| terminal | congestion | Vice versa |

1. **Paraphrase or translate the following sentences by analyze the components.**

1. This happens as the tree gets bigger and grows new outer layers of foliage that shade the inner and lower branches.

2. If a branch is not producing enough carbohydrate to cover its own running costs—i.e., it needs to be subsidized by other branches because, for example, it is being shaded and receives little light—it will usually be got rid of.

3. The creosote bush of United States deserts self-prunes, or removes parts of itself, in the face of extreme heat or drought, starting from the highest and most exposed twigs and working downward to bigger and bigger branches; it’s a desperate act because if the creosote bush loses too much wood, it dies.

4. In this situation, branches are shed in the same way as foliage in autumn by the prior formation of a corky layer that leaves the wound sealed over with cork, which in turn is undergrown with wood the following year.

5. To maintain flexibility, any one shoot can switch from long to short or vice versa depending on internal factors, light levels, and damage.

1. **Make 3 questions based on the passage. Post it on classroom wall or in Moodle for others to answer.**

**5. Make a summary of the passage within 150 words.**