

**Actual Test 3 – Part 1 – Passage 1**

**Listen to part of a conversation between a student and a professor.**

**Professor (male):** Good afternoon, how are you?

**Student (female):** Well, to be perfectly honest, Professor Anderson, I'm considering dropping this course.

**Professor:** Well, I am certainly not pleased to hear that... what seems to be the problem?

**Student:** I am having trouble keeping up with everything. I just joined the department this semester. I love archaeology, but I had no idea about...

**Professor:** *[anticipating the problem]* You had no idea about the heavy workload and all of the other demands made by this department, and now you feel as though you're in over your head?

**Student:** Exactly. I feel really disappointed, too — more in myself than anything else. When I first applied to the department, I was so sure of myself — and totally confident that I could handle it all with no problem.

**Professor:** I understand — believe me. I used to be a frustrated archaeology major, struggling to keep up with the lectures, the field work, quizzes, outside reading—you name it. Believe it or not, at one point I also considered changing my major.

**Student:** Really? *[hopeful]* So what's your advice? I'm guessing you don't think I should drop the class.

**Professor:** *[with authority]* No. Certainly not at this point, anyway. It's still early in the course. You shouldn't be so discouraged just because you've hit a few bumps along the road. What you're going through isn't really that unusual for first semester students. In fact, your situation is the rule and not the exception. I would be worried if we were not challenging you. In one sense, it's a good sign that we're keeping everyone in the department on their toes.

**Student:** Well, knowing that does make me feel a little better. But I still need to find a way to catch up before my average slips any lower. After all, it wouldn't do to end up getting tossed out of the department for bad grades.

**Professor:** Well, we're not going to let it come to that, so don't worry. I have a couple of ideas that I want to try. First off, I want to set you up with my Wednesday night study group. The group meets in the department conference room each Wednesday at 6 PM. You know where it is? On the first floor to the left when you first walk into the building? It's made up mostly of second semester and second year archaeology majors. They will be able to help you with all kinds of tips on how to keep up with the lectures, ideas on the best way to review your notes, and strategies on the most effective ways to prepare for tests and quizzes. It's also a good opportunity for you to work closely with some of your fellow students.

**Student:** What about the outside reading assignments? I know that most of the quizzes are based on them. How can the group help me get caught up with that?

**Professor:** At the start of every meeting, the group reviews and summarizes all of the reading so that everyone is caught up and up to date. I'm pretty sure that in no time you'll be back on track.

**Student:** Well, I really appreciate this, Professor Anderson. I'll be there on Wednesday, and hopefully I will be able to turn things around quickly.

**Actual Test 3 – Part 1 – Passage 2**

**Listen to part of a lecture in a paleontology class.**

If you're like many people who are afraid of some insects, then you should be happy that you're living in modern times and not during the Paleozoic Era. Why? Because at that time, for reasons we will discuss today, insects reached enormous sizes. There were cockroaches that could give a small dog a good fight, there were centipedes that were 8 feet long, there were giant nine foot scorpions, and there were dragonflies the size of hawks. Yeah, it would have been interesting going for a walk in the forest, that's for sure. But how was it that these insects got so large, and why aren't they so large today?

There has been a lot of debate about the factors that could have led to the development of giant insects, but recently scientists have begun to focus on how insects breathe. Well, we all know that animals, at least land animals, breathe with lungs, but insects are different. Insects breathe through a series of holes called trachea that are along the sides of their abdomens. Basically, air enters these holes and goes through a branching network of tubes into the insect's body where it eventually delivers the oxygen.

But there is a problem. The distance the oxygen can travel down these tubes is dependent on how much oxygen there is in the air. Make these tubes too long, and the oxygen in the air cannot sustain the life of the insect. On the other hand, if you doubled the concentration of oxygen in the air, you could make these tubes twice as long. So what exactly does that mean? Well, theoretically at least it means that the maximum size of an insect should be somewhat proportional to the concentration of oxygen in the air. Higher oxygen concentrations mean that insects can have longer breathing tubes, which, in turn, means larger bodies. Lower oxygen concentrations will have the opposite effect. So insects will by necessity reach some equilibrium with the oxygen present in their environment.

It's an interesting theory, but how can we be sure this is something more than that? I mean, is there any way to test this idea? Well, yes, there is... actually there are a few. In the first, we can take modern day insects, large insects like dragonflies and grasshoppers, and see how they react to different levels of oxygen in laboratory settings. Scientists have actually done this, and sure enough, insects generally become more active under higher concentrations of oxygen. Moreover, larger insects are more susceptible to lower levels of oxygen. In one study, researchers found while small grasshoppers remained relatively active under lower concentrations of oxygen, large grasshoppers grew extremely lethargic and inactive.

Now, while these results are highly suggestive, similar studies involving winged insects are even more interesting. When they tried similar experiments with dragonflies, they found that at lower oxygen levels they couldn't even fly at all. If that's the case, how would a dragonfly the size of a hawk been able to survive? The only logical answer seems to be that oxygen levels were much higher than they are now. Another interesting point to note is that as you increase the amount of oxygen in the air, you also increase the atmospheric pressure. The higher the pressure, the easier it is for an animal to fly. The easier it is to fly, the less oxygen it needs to use. So really, the dragonfly benefited from increased oxygen in more ways than one.

So far, the evidence seems pretty convincing, but the problem is that the evidence is circumstantial. Higher oxygen levels would have allowed insects to grow to large sizes, but how can we know that is what actually happened? I mean it's not like we can go back in time and check, right? Well, yes and no. I mean, we obviously can't go back and take direct

measurements, but there's a lot of geological evidence that still exists that allows us to deduce what conditions were like at this time. Scientists have found air bubbles trapped in amber that dated back hundreds of millions of years. They have then analyzed the gas content of these air bubbles, and what do you think they found? That most of them showed evidence that oxygen levels were much higher at the time of their formation. Whereas now oxygen composes 21% of the atmosphere, in these bubbles it composed 35%.

All right, so there seems to be definitive proof of this theory, but if any of you are harboring lingering doubts, there is one final piece of evidence that we can look at that makes the case all but certain. At the end of the Permian Period, it is believed that oxygen levels fell to as low as 15%. At around the same time, these large insect species completely disappear from the fossil record. That obviously cannot be a simple coincidence.

**Actual Test 3 – Part 1 – Passage 3**

**Listen to part of a lecture in a literature class.**

**Professor (Female):** Okay class. Now, over the past few weeks we've been discussing the many qualities of European literature during the Middle Ages. Today, I want to shift the focus to a specific medieval work that we will begin reading: Dante's epic poem *The Divine Comedy*, an Italian poem completed in 1321. Uh, before we begin, has anyone ever read this before?

**Student A (male):** Uh, I have, professor.

**Professor:** Excellent. Could you give the class a brief description of the poem?

**Student A:** Well, it's kind of hard to put everything into words. Basically, it is about this troubled man who is allowed to go on a journey to see different parts of the afterlife. He gets to see how wicked people are punished and how righteous people are rewarded by God after they die, and this transforms him into a virtuous person.

**Professor:** Uh, thank you. That is the basic idea. However, you're right when you say that the poem is very difficult to explain. Rather than try to describe the entire poem before we read it, I want to go over some of the basic aspects of it and show how it is an excellent example of medieval literature. This work is an epic poem that describes a man's incredible journey first through Hell, then Purgatory, and finally Heaven. However, this journey is not meant to be taken literally. Rather, it is an allegory. Uh, who remembers what an allegory is?

**Student B (female):** An allegory is a work in which every character, setting, and plot point symbolizes a concept. Like in the medieval French poem *Romance of the Rose*, where a man tries to gain the affections of a rose in a walled garden, the rose actually symbolizes female sexuality and the garden symbolizes courtly society.

**Professor:** Right. Now allegory wasn't invented in the Middle Ages, but it did become an extremely popular literature technique at this time. Note that there were many secular and religious allegories written during the Middle Ages, and *The Divine Comedy* is essentially the latter. The hero symbolizes not only the poet himself but essentially every human being: every human being must go through hell, endure sin and suffering, in order to reach heaven. Furthermore, every mythical creature and character described represents either some kind of moral vice or virtue. Thus, every part of the poem is symbolic of a more abstract concept – specifically, a religious or spiritual concept. Related to this, it is a fact that Dante's poem attempts to teach moral lessons through its symbolism. One of the most famous examples of this is seen in how fortune-tellers are punished in Hell. According to Dante, fortune-tellers are guilty of trying to magically foresee future events, which is something only God can do. As punishment, when they die, they wander through Hell with their heads twisted around so they can only face the area behind them. Additionally, they cry so much that their tears effectively blind them. This symbolizes how their desire to discern the future clearly has made them blind to virtue. As punishment, these souls are not allowed to look forward or see clearly at all. Incorporating similar moral and religious lessons was a significant part of many works of literature produced in a time when Christianity was dominant in both public and private life. *The Canterbury Tales*, a collection by the English poet Chaucer, is another example of medieval literature that attempts to impart similar lessons upon the readers, though many of these poems cover a wide array of secular topics. *The Divine Comedy*, however, devoted most of its use of allegory to the purpose of religious instruction, as it also did in its treatment of courtly love.

**Student B:** Um, what exactly is “courtly love”?

**Professor:** Courtly love is basically an idealized relationship between a man and a woman, in which the woman is typically already married, and therefore the two are unable to actually act on their emotions.

**Student B:** I would hardly call that ideal.

**Professor:** I know. It’s hard for us to get our heads around this concept today, but it was pervasive in medieval literature. Perhaps the most famous example is Lancelot’s love for his queen Guinevere. In this case, the idea was that because Guinevere was already married, Lancelot’s love could never be fully returned... their relationship existed on a purely platonic level.

**Student A:** And what’s the point of that?

**Professor:** Well, because courtly love had no physical or sexual element to it, it was supposed to be pure and uplifting. It was kind of an idealized relationship that was supposed to bring man to a higher spiritual level. Basically, this unattainable woman becomes a way for the man to come closer to God. I should note that later on, Lancelot actually does become physically involved with his queen, at which point their relationship can no longer be described as courtly love.

Now, in Dante’s work, courtly love is wonderfully exemplified in Dante’s poetic treatment of the character Beatrice. Beatrice is based on a young woman whom Dante only met twice in real life, and she died several years before the poem was written. Nevertheless, he was still deeply passionate about her and revered her, even after her death. In *The Divine Comedy* she is represented as an angel... uh, sort of a guide for the main character. In fact, the hero is only able to see the full glory of God because this angelic character shows mercy on him and guides him through Heaven. This is perhaps the most explicit treatment of the concept of courtly love in all of medieval literature.

**Actual Test 3 – Part 2 – Passage 1**

**Listen to part of a conversation between a student and a facilities manager.**

**Manager (male):** Hi. Can I help you?

**Student (female):** Uh, I hope so. I'm not really sure if this is the right place... I need to use a lecture hall this weekend.

**Manager:** This is the right place, all right.

**Student:** Great. So what do I need to do? Is there like a fee or something?

**Manager:** No. Rooms are available free of charge for all students currently enrolled at the university, but I'll have to ask you a few questions first. What exactly do you need the room for?

**Student:** I have a group presentation for my political science class next week and need to practice. Basically, we just need a quiet place where we can work out any kinks in our presentation.

**Manager:** A group presentation... OK... I'm assuming that there are just a few of you then, right?

**Student:** Uh-huh. Four of us, actually. Why?

**Manager:** Well, lecture halls are pretty big; most of them seat over a hundred people. I'm just thinking that a smaller classroom might be more appropriate.

**Student:** I'd already thought of that. A smaller room would be more comfortable, but part of our presentation involves PowerPoint slides, so we need a room with a projector and that sort of thing.

**Manager:** That won't be a problem. You can borrow a portable one here, and all of our classrooms have pull-down screens. You'll need to stop by here to pick up the room key on the day you plan to use the room anyway, so you can pick up a projector then.

**Student:** *(thinking)* OK.. yeah, I guess that will work. So what do I need to do to reserve a room?

**Manager:** Not a whole lot. Just tell me the date, time, and how long you need it for. Then, we'll look and see which classrooms are available at those times. Oh, and I need to see your student ID, just to confirm that you are currently enrolled.

**Student:** Sure, here. ♡ Uh, as far as a date and time go, we'll need a room this Saturday starting at 1 pm.

**Manager:** For how long?

**Student:** That's the thing. If all goes well, we should be done in about an hour and a half, but if it doesn't...

**Manager:** What if we put you down for four hours just to be on the safe side? You think that will be enough?

**Student:** Oh, yeah. Definitely.

**Manager:** Alright, then. I've reserved room 203 in Wembley Hall for you this Saturday from one to five.

**Student:** *(hesitant)* Wembley... that's on the east side of campus.

**Manager:** *(waiting for an explanation)* Uh-huh...

**Student:** It's just that everyone in my group commutes to school, and the student parking lot is on the west end. I mean, I guess if nothing else is available, we'll have to make do, but...

**Manager:** *(interrupting)* Well, hold on. We should be able to find something that isn't such a hike for you. OK. It looks like I got 423 in Turner Hall open. That's a bit closer.

**Student:** That'll do just fine. Thanks.

**Manager:** All right. Then you're all set. Oh, there is just one more thing. You'll need to read through the rules and conditions regarding room usage. It's nothing real demanding. It just says that you need to make sure the room is clean when you leave, things like that. Anyway, the rules are printed on this form. Read it over and then sign at the bottom.



### **Actual Test 3 – Part 2 – Passage 1**

**Listen to part of a lecture in an American history class.**

**Professor (female):**

You might well think that with the successful conclusion of the Revolutionary War, the newly formed United States would have been ready to move along the road to prosperity and take its place on the world stage. However, um, if you thought that the transition from a colony to new nation would be an easy matter, you would be wrong. In fact, after the surrender of Cornwallis at Yorktown, the new country was, you know... in a real mess.

Now, perhaps you remember some things I mentioned about the war. If you recall, I talked about the fact that General Washington couldn't pay his men, and it was hard to keep them from deserting. I mean, you can't blame them. They were putting their lives on the line for no financial gain. You also have to remember that many of them had families waiting for them at home for their financial help. Many of them operated farms and dairies that needed tending to. As a consequence of all this, most of the soldiers went back to their farms with very little, if any, money. And what did they find? Well, not bands and parades, that's for sure. They mainly found that they were deeply in debt, umm, because while they were gone, they were unable to pay their taxes. And since they still had no money, they were forced to sell off their possessions and even their whole farms, because if they didn't, they'd be sent to debtor's prison. Well, this may not have been quite as bad if they had gotten a fair price for their land, but this didn't happen, either. Many of these farms were bought at absurdly low prices by rich land speculators. So you've got to put yourself in these farmers' positions. They came back from giving years of their lives... uh, fighting for this new country for no money, and found that they were in danger of losing their land or being sent to prison. Yeah, they were angry.

The situation reached crisis levels during the 1780s and was most intense in the rural and relatively newly settled areas of central and western Massachusetts. Many farmers in this area suffered from high debt, and trying to establish new farms became almost impossible. Unlike many other state legislatures in the 1780s, the Massachusetts government didn't respond to the economic crisis by passing pro-debtor laws and printing more paper money. As a result, local sheriffs seized many farms, and some farmers who couldn't pay their debts were put in prison. Not surprisingly, this engendered a great deal of anger among Massachusetts farmers.

Now, this anger finally came to a head in western Massachusetts under a man named Daniel Shays. Shays had been an officer in Washington's Continental Army and was even honored by Washington himself. He was a respected man, and so it wasn't surprising that many former soldiers joined his cause. Initially their goals were simple and fairly modest. They would surround debtor's courts and, uh, effectively shut them down. In other words, their main objective was to prevent other farmers from being sent to prison. Now what you have to keep in mind is that in 1786, the federal government was nothing at all like it is today. It was very small and wielded very little power... The United States couldn't readily afford to send troops to help Massachusetts stop this revolution. So, the task fell to the Massachusetts government to send troops in themselves.

On January 25, 1787, Shays and his men marched into Springfield to seize the federal arsenal, but they were repulsed by a force of militia under the American general Benjamin Lincoln. The rebels fled toward the village of Petersham, where they were finally defeated. Most of the men

involved in the rebellion were pardoned later in the year. There was a great deal of public sympathy for these farmers — who, after all, were former soldiers. As for Daniel Shays, he ended up fleeing to Vermont, then to Canada. Upon his return to Vermont, he was condemned to death, but like his confederates, was granted a pardon in June of 1788.

Now, perhaps some of you think it's rather remarkable that Shays could basically get off scot-free. I mean he had fomented a rebellion, after all. But keep in mind that the leaders of the United States had themselves chosen to rebel against oppressive conditions just a few years earlier. In fact, Thomas Jefferson even remarked that such rebellions were "healthy for the country," and maybe he was right, for the problems highlighted by Shays' Rebellion eventually led to major changes in U.S. law.

### Actual Test 3 – Part 1 – Passage 3

Listen to part of a lecture in a biology class.

**Professor (male):** Has anyone ever wondered about the process of domestication? Have you ever thought about how down through history we've manipulated plants and animals for our benefit? One of the more interesting elements of this subject is how radically a given species be changed over a period of time—so much so that it is barely recognizable when compared to its original form. Now, how many of you realized that this was the case with corn?

**Student A (female):** Really... well, I guess I never really thought about it, so... OK, so, how did people even learn about corn, you know? Like how to grow it or that it's even edible?

**Professor:** Well, we know people living in central Mexico developed the distant ancestor of modern-day corn at least 7, 000 years ago. The process started from a wild grass called *teosinte*. Teosinte looked very different from our corn today. The kernels were small and were not placed close together like kernels on the husked ear of modern corn.

**Student B (male):** So exactly how different-looking was the corn—or the *teosinte* plants ancient times?

**Professor:** Very different... it was small, almost totally round, and had short “branches” on which the kernels grew.

**Student A:** So then the plant has undergone pretty major genetic changes?

**Professor:** Uh, yes and no. Domestication and undoubtedly wrought major changes in the physical structure of the plant, but in genetic terms corn is still very similar to its wild ancestor. A recent study found that only between two and four percent of the plant's genome has been changed through the process of domestication. So depending on what your viewpoint is, the changes have been major or relatively minor.

Let's take a look at some of the specific changes that came about. We know for sure that early farmers selected only the plants that showed a tendency toward straighter cobs, and that this characteristic is determined by a gene known as *tbt*.

**Student A:** And this *tbt* gene causes corn to grow strait?

**Professor:** Well, *tbt* specifically suppresses the growth of branches, and as a result of that, suppression produces straight cobs. Over time, with each successive generation, farmers selected plants in which this trait was ever more prominent.

**Student B:** So in one sense, early farmers were practicing a kind of genetic engineering.

**Professor:** Well, that's not a term that they would have understood at all. But they did understand that certain traits and characteristics could be introduced or bred in or removed.

**Student A:** Were there other characteristics of the corn plant that were changed over the years?

**Professor:** Yes... as corn was being domesticated, farmers selected a larger and larger “ear” with more and more rows of kernels, with the individual kernels spaced more closely together. In doing so, these early farmers shifted more of the plant’s energy focus toward developing the edible parts of the plant and away from the parts that were inedible. So they were basically upping the nutritional value of corn.

Now so far, we talked about the most basic changes that were brought about through the process of domestication, and these changes are basically universal to all types of domesticated corn. But as any farmer will tell you, talking about corn as if it is one plant is somewhat misleading. There are now, and have been for quite some time, a wide array of corn varieties.

**Student B:** How did that come about?

**Professor:** Uh, basically, it’s the same process. Various farmers had different needs... uh, they were in slightly different climates, or they wanted to put their corn to slightly different uses... and, uh, based on these different needs, they selected plants with different characteristics.

**Student B:** Could you give us a few examples?

**Professor:** Sure. Well, uh, for example, some farmers wanted to mill their corn into flour. That was easier to do if the outer shell of the corn was not quite as thick. So these farmers selected plants that had this characteristic, and the eventual result was a specialized type of corn that we now call flour corn. Uh, other examples revolve around the issue of taste. One of the newer types of corn, developed about 250 years ago, is known as sweet corn. It gets its name from the fact that it puts more of its energy into the production of sugars rather than into the production of carbohydrates, and as a result has a sweeter taste.

**Student A:** So when exactly did the process of domestication end?

**Professor:** Who said that it has? I would argue that it continues unabated... uh, in fact, at an accelerated pace. We have ever greater tools at our disposal to improve the productivity of corn and to put it to new uses. Prior generations were limited in their domestication efforts because they could only accentuate or suppress the characteristics already existent within corn’s genome. We, however, have the ability to insert entirely new traits into corn’s genetic code, which raises an entirely new realm of possibilities.