托福经典阅读练习详解：Architectur

Architecture is the art and science of designing structures that organize and enclose space for practical and symbolic purposes. Because architecture grows out of human needs and aspirations, it clearly communicates cultural values. Of all the visual arts, architecture affects our lives most directly for it determines the character of the human environment in major ways.

Architecture is a three-dimensional form. It utilizes space, mass, texture, line, light, and color. To be architecture, a building must achieve a working harmony with a variety of elements. Humans instinctively seek structures that will shelter and enhance their way of life. It is the work of architects to create buildings that are not simply constructions but also offer inspiration and delight. Buildings contribute to human life when they provide shelter, enrich space, complement their site, suit the climate, and are economically feasible. The client who pays for the building and defines its function is an important member of the architectural team. The mediocre design of many contemporary buildings can be traced to both clients and architects.

In order for the structure to achieve the size and strength necessary to meet its purpose, architecture employs methods of support that, because they are based on physical laws, have changed little since people first discovered them-even while building materials have changed dramatically. The world's architectural structures have also been devised in relation to the objective limitations of materials. Structures can be analyzed in terms of how they deal with downward forces created by gravity. They are designed to withstand the forces of compression (pushing together), tension (pulling apart), bending, or a combination of these in different parts of the structure.

Even development in architecture has been the result of major technological changes.

Materials and methods of construction are integral parts of the design of architecture structures. In earlier times it was necessary to design structural systems suitable for the materials that were available, such as wood, stone, brick. Today technology has progressed to the point where it is possible to invent new building materials to suit the type of structure desired. Enormous changes in materials and techniques of construction within the last few generations have made it possible to enclose space with much greater ease and speed and with a minimum of material. Progress in this area can be measured by the difference in weight between buildings built now and those of comparable size built one hundred ago.

Modern architectural forms generally have three separate components comparable to elements of the human body; a supporting skeleton or frame, an outer skin enclosing the interior spaces, equipment, similar to the body's vital organs and systems. The equipment includes plumbing, electrical wiring, hot water, and air-conditioning. Of course in early architecture—such as igloos and adobe structures—there was no such equipment, and the skeleton and skin were often one.

Much of the world’s great architecture has been constructed of stone because of its beauty, permanence, and availability. In the past, whole cities grew from the arduous task of cutting and piling stone upon. Some of the world’s finest stone architecture can be seen in the ruins of the ancient Inca city of Machu Picchu high in the eastern Andes Mountains of Peru.The doorways and windows are made possible by placing over the open spaces thick stone beams that support the weight from above. A structural invention had to be made before the physical limitations of stone could be overcome and new architectural forms could be created.That invention was the arch, a curved structure originally made of separate stone or brick segments. The arch was used by the early cultures of the Mediterranean area chiefly for underground drains, but it was the Romans who first developed and used the arch extensively in aboveground structures. Roman builders perfected the semicircular arch made of separate blocks of stone. As a method of spanning space, the arch can support greater weight than a horizontal beam. It works in compression to divert the weight above it out to the sides, where the weight is borne by the vertical elements on either side of the arch. The arch is among the many important structural breakthroughs that have characterized architecture throughout the centuries.

Paragraph 1：Architecture is the art and science of designing structures that organize and enclose space for practical and symbolic purposes. Because architecture grows out of human needs and aspirations, it clearly communicates cultural values. Of all the visual arts, architecture affects our lives most directly for it determines the character of the human environment in major ways.

1. According to paragraph 1, all of the following statements about architecture are true EXCEPT:

〇Architecture is visual art.

〇Architecture reflects the cultural values of its creators.

〇Architecture has both artistic and scientific dimensions.

〇Architecture has an indirect effect on life.

Paragraph 2：Architecture is a three-dimensional form. It utilizes space, mass, texture, line, light, and color. To be architecture, a building must achieve a working harmony with a variety of elements. Humans instinctively seek structures that will shelter and enhance their way of life. It is the work of architects to create buildings that are not simply constructions but also offer inspiration and delight. Buildings contribute to human life when they provide shelter, enrich space, complement their site, suit the climate, and are economically feasible. The client who pays for the building and defines its function is an important member of the architectural team. The mediocre design of many contemporary buildings can be traced to both clients and architects.

2.The word “feasible” in the passage is closet in meaning to

○In existence

○Without question

○Achievable

○Most likely

Paragraph 3：In order for the structure to achieve the size and strength necessary to meet its purpose, architecture employs methods of support that, because they are based on physical laws, have changed little since people first discovered them-even while building materials have changed dramatically. The world's architectural structures have also been devised in relation to the objective limitations of materials. Structures can be analyzed in terms of how they deal with downward forces created by gravity. They are designed to withstand the forces of compression (pushing together), tension (pulling apart), bending, or a combination of these in different parts of the structure.

3. 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.

○Unchanging physical laws have limited the size and strength of buildings that can be made with materials discovered long ago.

○Building materials have changed in order to increase architectural size and strength, but physical laws of structure have not changed.

○When people first started to build, the structural methods used to provide strength and size were inadequate because they were not based on physical laws.

○Unlike building materials, the methods of support used in architecture have not changed over time because they are based on physical laws.

4. The word "devised" in the passage is closest in meaning to

○Combined

○Created

○Introduced

○Suggested

Paragraph 4 ： Even development in architecture has been the result of major technological changes. Materials and methods of construction are integral parts of the design of architecture structures. In earlier times it was necessary to design structural systems suitable for the materials that were available, such as wood, stone, brick. Today technology has progressed to the point where it is possible to invent new building materials

to suit the type of structure desired. Enormous changes in materials and techniques of construction within the last few generations have made it possible to enclose space with much greater ease and speed and with a minimum of material. Progress in this area can be measured by the difference in weight between buildings built now and those of comparable size built one hundred ago.

5. The word “integral” is closet in meaning to

〇Essential

〇Variable

〇Practical

〇Independent

6. According to paragraph 4, which of the following is true about materials used in the construction of buildings?

〇 Because new building materials are hard to find, construction techniques have changed very little from past generations.

〇The availability of suitable building materials no longer limits the types of structures that may be built.

〇The primary building materials that are available today are wood, stone, and brick.

〇Architects in earlier times did not have enough building materials to enclose large spaces.

7. In paragraph 4, what does the author imply about modern buildings?

〇They occupy much less space than buildings constructed one hundred years ago.

〇They are not very different from the building of a few generations ago.

〇The weigh less in relation to their size than buildings constructed one hundred years ago.

〇They take a long time to build as a result of their complex construction methods.

Paragraph 5: Modern architectural forms generally have three separate components comparable to elements of the human body; a supporting skeleton or frame, an outer skin enclosing the interior spaces, equipment, similar to the body’s vital organs and systems. The equipment includes plumbing, electrical wiring, hot water, and air-conditioning. Of course in early architecture—such as igloos and adobe structures—there was no such equipment, and the skeleton and skin were often one.

8. Which of the following correctly characterizes the relationship between the human body and architecture that is described in paragraph5?

〇Complex equipment inside buildings is the one element in modern architecture that resembles a component of the human body.

〇The components in early buildings were similar to three particular elements of the human body.

〇Modern buildings have components that are as likely to change as the human body is.

〇In general, modern buildings more closely resemble the human body than earlier buildings do.

Paragraph 6: Much of the world’s great architecture has been constructed of stone because of its beauty, permanence, and availability. In the past, whole cities grew from the arduous task of cutting and piling stone upon. Some of the world’s finest stone architecture can be seen in the ruins of the ancient Inca city of Machu Picchu high in the eastern Andes Mountains of Peru. The doorways and windows are made possible by placing over the open spaces thick stone beams that support the weight from above. A structural invention had to be made before the physical limitations of stone could be overcome and new architectural forms could be created. That invention was the arch, a curved structure originally made of separate stone or brick segments. The arch was used by the early cultures of the Mediterranean area chiefly for underground drains, but it was the Romans who first developed and used the arch extensively in aboveground structures. Roman builders perfected the semicircular arch made of separate blocks of stone. As a method of spanning space, the arch can support greater weight than a horizontal beam. It works in compression to divert the weight above it out to the sides, where the weight is borne by the vertical elements on either side of the arch. The arch is among the many important structural breakthroughs that have characterized architecture throughout the centuries.

9. The word “arduous” in the passage is closest in meaning to

〇Difficult

〇Necessary

〇Skilled

〇Shared

10. Why does the author include a description of how the “doorways and windows” of Machu Picchu were constructed?

〇To indicate that the combined skeletons and skins of the stone buildings of Machu Picchu were similar to igloos and adobe structures

〇To indicate the different kinds of stones that had to be cut to build Machu Picchu

〇To provide an illustration of the kind of construction that was required before arches were invented

〇To explain how ancient builders reduced the amount of time necessary to construct buildings from stone.

11.According to paragraph6, which of the following statements is true of the arch?

〇The Romans were the first people to use the stone arch.

〇The invention of the arch allowed new architectural forms to be developed.

〇The arch worked by distributing the structural of a building toward the center of the arch.

〇The Romans followed earlier practices in their use of arches.

Paragraph 5：■ Modern architectural forms generally have three separate components comparable to elements of the human body; a supporting skeleton or frame, an outer skin enclosing the interior spaces, equipment, similar to the body’ s vital organs and systems. ■ The equipment includes plumbing, electrical wiring, hot water, and air-conditioning. ■Of course in early architecture—such as igloos and adobe structures—there was no such equipment, and the skeleton and skin were often one. ■

12.Look at the four squares [■] that indicate where the following sentence could be added to the passage.

However, some modern architectural designs, such as those using folded plates of concreter or air-inflated structures, are again unifying skeleton and skin.

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

13.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 sentences 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.

Architecture uses forms and space to express cultural values.

●

●

●

Answer choices

Architects seek to create buildings that are both visually appealing and well suited for human use.

〇Over the course of the history of building, innovations in material and methods of construction have given architects ever greater freedom to express themselves.

〇Throughout history buildings have been constructed like human bodies, needing distinct “organ” systems in order to function.

〇Both clients and architects are responsible for the mediocre designs of some modern buildings.

〇Modern buildings tend to lack the beauty of ancient stone buildings such as those of Machu Picchu.

〇The discovery and use of the arch typifies the way in which architecture advances by developing more efficient types of structures.

参考答案：

1. 〇 4
2. 〇 3
3. 〇 4
4. 〇 2
5. 〇 1
6. 〇 2
7. 〇 3
8. 〇 4
9. 〇 1
10. 〇 3
11. 〇 2
12. 〇 4
13. 〇1 2 6