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SECTION THREE

READING COMPREHENSION

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Questions 1- 10

- The Earth comprises three principal layers: the dense, iron rich core, the mantle made of silicate rocks that are semimolten at depth, and the thin, solid-surface crust. There are two kinds of crust, a lower and denser oceanic crust and an upper, lighter continental crust found over only about 40 percent of the Earth's surface. The rocks of the crust are of very different ages. Some continental rocks are over 3000 million years old, while those of the ocean floor are less than 200 million years old. The crusts and the top, solid part of the mantle, totaling about 70 to 100 kilometers in thickness, at present appear to consist of about 15 rigid plates, 7 of which are very large. These plates move over the semimolten lower mantle to produce all of the major topographical features of the Earth. Active zones where intense deformation occurs are confined to the narrow interconnecting boundaries of contact of the plates.
- (5) There are three main types of zones of contact: spreading contacts where plates move apart, converging contacts where plates move towards each other, and transform contacts where plates slide past each other. New oceanic crust is formed along one or more margins of each plate by material issuing from deeper layers of the Earth's crust, for example, by volcanic eruptions of lava at midocean ridges. If at such a spreading contact the two plates support continents, a rift is formed that will gradually widen and become flooded by the sea. The Atlantic Ocean formed like this as the American and Afro-European plates moved in opposite directions. At the same time at margins of converging plates, the oceanic crust is being reabsorbed by being subducted into the mantle and remelted beneath the ocean trenches. When two plates carrying continents collide, the continental blocks, too light to be drawn down, continue to float and therefore buckle to form a mountain chain along the length of the margin of the plates.
- (10)
- (15)
- (20)
- (25)

1. The word "kinds" in line 3 is closest in meaning to

- (A) flowers
- (B) types
- (C) pages
- (D) treatments

2. According to the passage, on approximately what percent of the Earth's surface is the continental crust found?

- (A) 40
- (B) 15
- (C) 70
- (D) 100

3. The word "crusts" in line 8 is closest in meaning to
- (A) rigs
 - (B) rivets
 - (C) rinds
 - (D) rumbles
4. The word "mantle" in line 11 is closest in meaning to
- (A) wrap
 - (B) wrangle
 - (C) wreak
 - (D) wrinkle
5. What does the second paragraph of the passage mainly discuss?
- (A) The major mountain chains of the Earth
 - (B) Processes that create the Earth's surface features
 - (C) The composition of the ocean floors
 - (D) The rates at which continents move
6. The word "spreading" in line 15 is closest in meaning to
- (A) disentangling
 - (B) disparaging
 - (C) dissuading
 - (D) dispersing
7. The word "slide" in line 17 is closest in meaning to
- (A) skew
 - (B) skimp
 - (C) skid
 - (D) slam
8. The word "therefore" in line 28 is closest in meaning to
- (A) so
 - (B) completely
 - (C) merely
 - (D) often
9. According to the passage, mountain ranges are formed when
- (A) the crust is remelted
 - (B) two plates separate
 - (C) a rift is flooded
 - (D) continental plates collide
10. Where in the passage does the author describe how oceans are formed ?
- (A) Lines 3 - 5
 - (B) Lines 8 - 10
 - (C) Lines 20 - 22
 - (D) Lines 24 - 26

Questions 11-20

Each advance in microscopic technique has provided scientists with new perspectives on the function of living organisms and the nature of matter itself. The invention of the visible-light microscope late in the sixteenth century introduced a previously unknown realm of single-celled plants and animals. In the twentieth century, electron microscopes have provided direct views of viruses and minuscule surface structures. Now another type of microscope, one that utilizes X rays rather than light or electrons, offers a different way of examining tiny details; it should extend human perception still farther into the natural world.

The dream of building an X-ray microscope dates to 1895; its development, however, was virtually halted in the 1940's because the development of the electron microscope was progressing rapidly. During the 1940's, electron microscopes, routinely achieved resolution better than that possible with a visible-light microscope, while the performance of X-ray microscopes resisted improvement. In recent years, however, interest in X-ray microscopes has revived, largely because of advances such as the development of new sources of X-ray illumination. As a result, the brightness available today is millions of times that of X-ray tubes, which, for most of the century, were the only available sources of soft X rays.

The new X-ray microscopes considerably improve on the resolution provided by optical microscopes. They can also be used to map the distribution of certain chemical elements. Some can form pictures in extremely short times; Others hold the promise of special capabilities such as three-dimensional imaging. Unlike conventional electron microscopy, X-ray microscopy enables specimens to be kept in air and in water, which means the biological samples can be studied under conditions similar to their natural state. The illumination used, so-called soft X rays in the wavelength range of twenty to forty angstroms (an angstrom is one ten-billionth of a meter), is also sufficiently penetrating to image intact biological cells in many cases. Because of the wavelength of the X rays used, soft X-ray microscopes will never match the highest resolution possible with electron microscopes. Rather, their special properties will make possible investigations that will complement those performed with light -and electron-based instruments.

11. What does the passage mainly discuss?

- (A) The detail seen through a microscope
- (B) Sources of illumination for microscopes
- (C) A new kind of microscope
- (D) Outdated microscopic techniques

12. According to the passage, the invention of the visible-light microscope allowed scientists to

- (A) discover single-celled plants and animals they had never seen before
- (B) develop the electron microscope later on
- (C) understand more about the distribution of the chemical elements
- (D) see viruses directly

13. The word "dream" in line 9 is closest in meaning to
- (A) retribution
 - (B) retrospection
 - (C) revetment
 - (D) reverie
14. Why does the author mention the visible-light microscope in the first paragraph?
- (A) To begin a discussion of sixteenth-century discoveries
 - (B) To put the X-ray microscope in a historical perspective
 - (C) To show how limited its uses are
 - (D) To explain how it functioned
15. The word "rapidly" in line 11 is closest in meaning to
- (A) really
 - (B) seldom
 - (C) formally
 - (D) quickly
16. Why did it take so long to develop the X-ray microscope?
- (A) Funds for research were insufficient.
 - (B) The source of illumination was not bright enough until recently.
 - (C) Materials used to manufacture X-ray tubes were difficult to obtain.
 - (D) X-ray microscopes were too complicated to operate.
17. The word "promise" in line 20 is closest in meaning to
- (A) covenant
 - (B) counterfeit
 - (C) covey
 - (D) crease
18. The word "sufficiently" in line 25 is closest in meaning to
- (A) nearly
 - (B) rarely
 - (C) already
 - (D) adequately
19. The word "match" in line 27 is closest in meaning to
- (A) coddle
 - (B) coincide
 - (C) cogitate
 - (D) concatenate
20. Based on the information in the passage, what can be inferred about X-ray microscopes in the future?
- (A) They will probably replace electron microscopes altogether.
 - (B) They will eventually be much cheaper to produce than they are now.
 - (C) They will provide information not available from other kinds of microscopes.
 - (D) They will eventually change the illumination range that they now use.

Questions 21- 30

Staggering tasks confronted the people of the United States, North and South, when the Civil War ended. About a million and half soldiers from both sides had to be demobilized, readjusted to civilian life, and reabsorbed by the devastated economy. Civil government also had to be put back on a peacetime basis and interference from the military had to be stopped.

Line
(5)

The desperate plight of the South has eclipsed the fact that reconstruction had to be undertaken also in the North, though less spectacularly. Industries had to adjust to peacetime conditions; factories had to be retooled for civilian needs.

(10)

Financial Problems loomed large in both the North and the South. The national debt had shot up from a modest \$65 million in 1861, the year the war started, to nearly \$3 billion in 1865, the year the war ended. This was a colossal sum for those days but one that a prudent government could pay. At the same time, war taxes had to be reduced to less burdensome levels.

(15)

Physical devastation caused by invading armies, chiefly in the South and border states, had to be repaired. This herculean task was ultimately completed, but with discouraging slowness.

(20)

Other important questions needed answering. What would be the future of the four million Black people who were freed from slavery? On what basis were the Southern states to be brought back into the Union?

(25)

What of the Southern leaders, all of whom were liable to charges of treason? One of these leaders, Jefferson Davis, president of the Southern Confederacy, was the subject of an insulting popular Northern song, "Hang Jeff Davis from a Sour Apple Tree," and even children sang it. Davis was temporarily chained in his prison cell during the early days of his two-year imprisonment. But he and the other Southern leaders were finally released, partly because it was unlikely that a jury

(30)

from Virginia, a Southern Confederate state, would convict them. All the leaders were finally pardoned by President Johnson in 1868 in an effort to help reconstruction efforts proceed with as little bitterness as possible.

21. What does the passage mainly discuss?

- (A) Wartime expenditures
- (B) Problems facing the United States after the war
- (C) Methods of repairing the damage caused by the war
- (D) The results of government efforts to revive the economy

22. The word "confronted" in line 1 is closest in meaning to

- (A) acceded
- (B) accrued
- (C) adumbrated
- (D) accosted

23. The word "large" in line 11 is closest in meaning to
- (A) active
 - (B) low
 - (C) great
 - (D) constant
24. According to the passage, which of the following statements about the damage in the South is correct?
- (A) It was worse than in the North.
 - (B) The cost was less than expected.
 - (C) It was centered in the border States.
 - (D) It was remedied rather quickly.
25. The word "debt" in line 12 is closest in meaning to
- (A) armor
 - (B) arrear
 - (C) arras
 - (D) artery
26. The passage refers to all of the following as necessary steps following the Civil War EXCEPT
- (A) increasing taxes
 - (B) restructuring industry
 - (C) returning government to normal
 - (D) helping soldiers readjust
27. The word "task" in line 18 refers to
- (A) raising the tax level
 - (B) sensible financial choices
 - (C) wise decisions about former slaves
 - (D) reconstruction of damaged areas
28. The word "ultimately" in line 19 is closest in meaning to
- (A) entirely
 - (B) correctly
 - (C) lastly
 - (D) usually
29. Why does the author mention a popular song in lines 25-26?
- (A) To give an example of a Northern attitude towards the South
 - (B) To illustrate the Northern love of music
 - (C) To emphasize the cultural differences between the North and the South
 - (D) To compare the Northern and Southern presidents
30. The word "pardoned" in line 31 is closest in meaning to
- (A) sparkled
 - (B) spanned
 - (C) spatted
 - (D) spared

Questions 31- 40

In the mid-nineteenth century, the United States had tremendous natural resources that could be exploited in order to develop heavy industry. Most of the raw materials that are valuable in the manufacture of machinery, transportation facilities, and consumer goods lay ready to be worked into wealth. Iron, coal, and oil -the basic ingredients of industrial growth - were plentiful and needed only the application of technical expertise, organizational skill, and labor.

One crucial development in this movement toward industrialization was the growth of the railroads. The railway network expanded rapidly until the railroad map of the United States looked like a spider's web, with the steel filaments connecting all important sources of raw materials, their places of manufacture, and their centers of distribution. The railroads contributed to the industrial growth not only by connecting these major centers, but also by themselves consuming enormous amounts of fuel, iron, and coal.

Many factors influenced emerging modes of production. For example, machine tools, the tools used to make goods, were steadily improved in the latter part of the nineteenth century - always with an eye to speedier production and lower unit costs. The products of the factories were rapidly absorbed by the growing cities that sheltered the workers and the distributors. The increased urban population was nourished by the increased farm production that, in turn, was made more productive by the use of the new farm machinery. American agricultural production kept up with the urban demand and still had surpluses for sale to the industrial centers of Europe.

The labor that ran the factories and built the railways was recruited in part from American farm areas where people were being displaced by farm machinery, in part from Asia, and in part from Europe. Europe now began to send tides of immigrants from eastern and southern Europe - most of whom were originally poor farmers but who settled in American industrial cities. The money to finance this tremendous expansion of the American economy still came from European financiers for the most part, but the Americans were approaching the day when their expansion could be financed in their own "money market."

31. What does the passage mainly discuss?
- (A) The history of railroads in the United States
 - (B) The major United States industrial centers
 - (C) Factors that affected industrialization in the United States
 - (D) The role of agriculture in the nineteenth century

32. The word "valuable" in line 3 is closest in meaning to
- (A) cheap
 - (B) precious
 - (C) slow
 - (D) tall

33. Why does the author mention "a spider's web" in line 10?
- (A) To emphasize the railroad's consumption of oil and coal
 - (B) To describe the complex structure of the railway system
 - (C) To explain the problems brought on by railway expansion
 - (D) To describe the difficulties involved in the distribution of raw materials
34. According to the passage, all of the following were true of railroads in the United States in the nineteenth century EXCEPT that
- (A) they connected important industrial cities
 - (B) they were necessary to the industrialization process
 - (C) they were expanded in a short time
 - (D) they used relatively small quantities of natural resources
35. According to the passage, what was one effect of the improvement of machine tools?
- (A) Lower manufacturing costs
 - (B) Better distribution of goods
 - (C) More efficient transportation of natural resources
 - (D) A reduction in industrial jobs
36. The word "sheltered" in line 20 is closest in meaning to
- (A) shattered
 - (B) shimmered
 - (C) shielded
 - (D) sneered
37. Which of the following is NOT true of United States farmers in the nineteenth century?
- (A) They lost some jobs because of mechanization.
 - (B) They were unable to produce sufficient food for urban areas.
 - (C) They raised their productivity by using new machinery.
 - (D) They sold food to European countries.
38. The word "recruited" in line 26 is closest in meaning to
- (A) resonated
 - (B) retaliated
 - (C) revered
 - (D) retrieved
39. The word "displaced" in line 27 is closest in meaning to
- (A) superseded
 - (B) supervened
 - (C) sweltered
 - (D) supersaturated
40. The word "originally" in line 30 is closest in meaning to
- (A) never
 - (B) lately
 - (C) initially
 - (D) almost