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Exercise 25

Since 1953, many experimental attempts to synthesize the chemical constituents of life under "primitive Earth conditions" have demonstrated that a variety of the complex molecules currently making up living organisms could have been present in the early ocean and atmosphere, with only one limitation: such molecules are synthesized far less readily when oxygen-containing compounds dominate the atmosphere. Therefore some scientists postulate that the Earth's earliest atmosphere, unlike that of today, was dominated by hydrogen, methane, and ammonia. From these studies, scientists have concluded that the surface of the primitive Earth was covered with oceans containing the molecules fundamental to life. Although, at present, scientists cannot explain how these relatively small molecules combined to produce larger, more complex molecules, some scientists have precipitously ventured hypotheses that attempt to explain the development, from larger molecules, of the earliest self-duplicating organisms. (138 words)



- 1. According to the passage, which of the following can be inferred about the process by which the chemical constituents of life were synthesized under primitive Earth conditions?
 - (A) The synthesis is unlikely to occur under current atmospheric conditions
 - (B) The synthesis is common in modern laboratories.
 - (C)The synthesis occurs more readily in the atmosphere than in the ocean.
 - (D)The synthesis easily produces the most complex organic molecules.
 - (E)The synthesis is accelerated by the presence of oxygen-containing compounds.
- 2.It can be inferred from the passage that "some scientists" assume which of the following concerning " larger, more complex molecules"
 - (A) The earliest atmosphere was forward primarily of these molecules.
 - (B) Chemical processes involving these molecules proceeded much more slowly under primitive Earth conditions.
 - (C) The presence of these molecules would necessarily precede the existence of simple organisms.
 - (D) Experimental techniques will never be sufficiently sophisticated to produce in the laboratory simple organisms from these chemical constituents.
 - (E) Explanations could easily be developed to explain how simple molecules combined to form these more complex ones.





It is frequently assumed that the mechanization of work has a revolutionary effect on the lives of the people who operate the new machines and on the society into which the machines have been introduced. For example, it has been suggested that the employment of women in industry took them out of the household, their traditional sphere, and fundamentally altered their position in society. In the nineteenth century, when women began to enter factories, Jules Simon, a French politician, warned that by doing so, women would give up their femininity. Friedrich Engels, however, predicted that women would be liberated from the "social, legal, and economic subordination" of the family by technological developments that made possible the recruitment of "the whole female sex into public industry." Observers thus differed concerning the social desirability of mechanization's effects, but they agreed that it would transform women's lives.

Historians, particularly those investigating the history of women, now seriously question this assumption of transforming power. They conclude that such dramatic technological innovations as the spinning jenny, the sewing machine, the typewriter, and the vacuum cleaner have not resulted in equally dramatic social changes in women's economic position or in the prevailing evaluation of women's work. The employment of young women in textile mills during the Industrial Revolution was largely an extension of an older pattern of employment of young, single women as domestics. It was not the change in office technology, but rather the separation of secretarial work, previously seen as an apprenticeship for beginning managers, from administrative work that in the 1880's created a new class of "dead-end" jobs, thenceforth considered "women's work." The increase in the numbers of married women employed outside the home in the twentieth century had less to do with the mechanization of housework and an increase in leisure time for these women than it did with their own economic necessity and with high marriage rates that shrank the available pool of single women workers, previously, in many cases, the only women employers would hire.

Women's work has changed considerably in the past 200 years, moving from the household to the office or the factory, and later becoming mostly white-collar instead of

blue-collar work. Fundamentally, however, the conditions under which women work have changed little since before the Industrial Revolution: the segregation of occupations by gender, lower pay for women as a group, jobs that require relatively low levels of skill and offer women little opportunity for advancement all persist, while women's household labor remains demanding. Recent historical investigation has led to a major revision of the notion that technology is always inherently revolutionary in its effects on society. Mechanization may even have slowed any change in the traditional position of women both in the labor market and in the home.







- 3. Which of the following statements best summarizes the main idea of the passage?
 - (A) The effects of the mechanization of women's work have not borne out the frequently held assumption that new technology is inherently revolutionary.
 - (B) Recent studies have shown that mechanization revolutionizes a society's traditional values and the customary roles of its members.
 - (C) Mechanization has caused the nature of women's work to change since the Industrial Revolution.
 - (D) The mechanization of work creates whole new classes of jobs that did not previously exist.
 - (E) The mechanization of women's work, while extremely revolutionary it its effects, has not, on the whole, had the deleterious effects that some critics had feared.
- 4.It can be inferred from the passage that the author would consider which of the following to be an indication of a fundamental alteration in the conditions of women's work?
- (A) Statistics showing that the majority of women now occupy white-collar positions
- (B) Interviews with married men indicating that they are now doing some household tasks
- (C) Surveys of the labor market documenting the recent creation of a new class of jobs in electronics in which women workers outnumber men four to one
- (D) Census results showing that working women's wages and salaries are, on the average, as high as those of working men
- (E) Enrollment figures from universities demonstrating that increasing numbers of young women are choosing to continue their education beyond the undergraduate level

For the following question, consider each of the choices separately and select all that apply

- 5. Which of the following statement about many employers before the twentieth century are NOT implied in the passage?
- A They did not employ women in factories.
- B They tended to employ single rather than married women.
- They hired women only when qualified men were not available to fill the open positions.
- 6. Which of the following best describes the function of the concluding sentence of the passage?
 - (A) It sums up the general points concerning the mechanization of work made in the passage as a whole.
 - (B) It draws a conclusion concerning the effects of the mechanization of work which goes beyond the evidence presented in the passage as a whole.
 - (C) It restates the point concerning technology made in the sentence immediately preceding it.
 - (D) It qualifies the author's agreement with scholars who argue for a major revision in the assess ment of the impact of mechanization on society
 - (E) It suggests a compromise between two seemingly contradictory views concerning the effects of mechanization on society.





Over the last 40 years there has been a great increase not only in the number of agricultural pesticides in use but also in the care and sophistication with which they are used by farmers. Nevertheless, the proportion of agricultural crops lost to certain pests worldwide has increased over the same period, even when the pests concerned have not developed resistance to existing pesticides.



- 7. Which of the following, if true. best explains how improvements in pesticide use have been accompanied by greater losses to certain pests?
- (A) Some dangerous but relatively ineffective pesticides common 40 years ago are no longer in widespread use.
- (B) As pesticides have become increasingly pestspecific, controlling certain pests with pesticides has turned out to cost more in many cases than the value of crop losses caused by those pests.
- (C) Because today's pesticides typically have more specific application conditions than did pesticides in use 40 years ago, today's farmers observe their fields more closely than did farmers 40 years ago.
- (D) Certain pest-control methods that some farmers use today do not involve the use of chemical pesticides but are just as effective in eliminating insect pests as those that do.
- (E) Forty years ago, much less was known about the effects of pesticides on humans and other mammalian species than is now known.







Researchers are finding that in many ways an individual bacterium is more analogous to a component cell of a multicellular organism than it is to a free-living, autonomous organism. Anabaena, a freshwater bacteria is a case in point. Among photosynthetic bacteria, Anabaena is unusual: it is capable of both photosynthesis and nitrogen fixation. Within a single cell, these two biochemical processes are incompatible: oxygen produced during photosynthesis, inactivates the nitrogenase required for nitrogen fixation. In Anabaena communities, however, these processes can coexist. When fixed nitrogen compounds are abundant, Anabaena is strictly photosynthetic and its cells are all alike. When nitrogen levels are low, however, specialized cells called heterocysts are produced which lack chlorophyll (necessary for photosynthesis) but which can fix nitrogen by converting nitrogen gas into a usable form. Submicroscopic channels develop which connect the heterocyst cells with the photosynthetic ones and which are used for transferring cellular products between the two kinds of *Anabaena* cells.

(156 words)

- 8.It can be inferred from the passage that cell differentiation within *Anabaena* is regulated by the
 - (A) amount of oxygen Anabaena cells produce
 - (B) season of the year
 - (C) amount of fixed nitrogen compounds available
 - (D) number of microscopic channels uniting *Anabaena* cells
 - (E) amount of chlorophyll in Anabaena cells
- 9. The author uses the example of *Anabaena* to illustrate the
 - (A) uniqueness of bacteria among unicellular organisms
 - (B) inadequacy of an existing view of bacteria
 - (C) ability of unicellular organisms to engage in photosynthesis
 - (D) variability of a freshwater bacteria
 - (E) difficulty of investigating even the simplest unicellular organisms







Scholars often fail to see that music played an important role in the preservation of African culture in the United States. They correctly note that slavery stripped some cultural elements from Black people-their political and economic systems-but they underestimate the significance of music in sustaining other African cultural values. African music, unlike the music of some other cultures, was based on a total vision of life in which music was not an isolated social domain. In African culture music was pervasive, serving not only religion, but all phases of life, including birth, death, work, and play. Music, like art in general, was so inextricably a part of African culture that it became a crucial means of preserving the culture during and after the dislocations of slavery.

(126 words)

- 10. In the argument given, the two highlighted portions play which of the following roles?
 - The first sentence introduces the topic of the passage and the last one summarizes the passage.
 - ® The first sentence presents a thesis and the last one further develops the thesis.
 - The first sentence summarizes the main idea of the passage and the last one paraphrases it literally.
 - The first sentence presents a context for the discussion of the passage and the last one summarizes the discussion.
 - © The first sentence presents the negative thesis of the passage and the last one presents the positive thesis.









