

EST I - Literacy Test II

Student's Name	
National ID	
Test Center:	

Duration: 65 minutes

52 Multiple Choice Questions

Instructions:

- Place your answer on the answer sheet. Mark only one answer for each of the multiple choice questions.
- Avoid guessing. Your answers should reflect your overall understanding of the subject matter.

The following edited passage is taken from A Tale of Two Cities by Charles Dickens. The novel takes place before and after the French Revolution and the passage introduces the first paragraphs of the novel, setting the stage for future events.

It was the best of times,
it was the worst of times,
it was the age of wisdom,
it was the age of foolishness,

5 it was the epoch of belief,
it was the epoch of incredulity,
it was the season of Light,
it was the season of Darkness,
it was the spring of hope,

10 it was the winter of despair,

we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way— in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only.

There were a king with a large jaw and a queen with a plain face, on the throne of England; there were a king with a large jaw and a queen with a fair face, on the throne of France. In both countries it
was clearer than crystal to the lords of the State preserves of loaves and fishes, that things in general were settled for ever.

It was the year one thousand seven

30 hundred and seventy-five. Spiritual revelations were conceded to England at that favored period, as at this. Mrs. Southcott had recently attained her five-and-twentieth blessed birthday, of
 35 whom a prophetic private in the Life Guards had heralded the sublime appearance by announcing that arrangements were made for the swallowing up of London and
 40 Westminster. Even the Cock-lane ghost

40 Westminster. Even the Cock-lane ghost had been laid only a round dozen of years, after rapping out its messages, as the spirits of this very year last past (supernaturally deficient in originality)
45 rapped out theirs. Mere messages in the earthly order of events had lately come to the English Crown and People, from a congress of British subjects in America: which, strange to relate, have proved
50 more important to the human race than any communications yet received through any of the chickens of the Cock-lane brood.

France, less favored on the whole as to 55 matters spiritual than her sister of the shield and trident, rolled with exceeding smoothness down hill, making paper money and spending it. Under the guidance of those who ruled her, she 60 entertained herself, besides, with such humane achievements that were nothing but humane, sentencing a youth to his utter demise because he had not kneeled down in the rain to do honor to a traitor 65 which passed within his view, at a distance of some fifty or sixty yards. It is likely enough that, rooted in the woods of France and Norway, there were growing trees, when that sufferer 70 was put to death, already marked by the Woodman, Fate, to come down and be sawn into boards, to make a certain movable framework with a sack and a knife in it, terrible in history. It is likely 75 enough that in the rough outhouses of

to Paris, there were sheltered from the weather that very day, rude carts, bespattered with rustic mire, snuffed 80 about by cows, and roosted in by poultry, which the Farmer, Death, had already set apart to be his tumbrils of the Revolution. But that Woodman and that Farmer, though they work unceasingly, work silently, and no one heard them as

some tillers of the heavy lands adjacent

they went about with muffled tread: the rather, forasmuch as to entertain any suspicion that they were awake, was to be disloyal and traitorous.

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- 1. The primary purpose of lines 1-14 is to
 - A. criticize a movement.
 - **B.** establish a theme of duality.
 - **C.** draw a contrast between ideas.
 - **D.** discredit a time period.
- 2. The evidence in the passage suggests that the story most likely takes place
 - **A.** in the 17th century.
 - **B.** in the 18th century.
 - C. during World War I.
 - **D.** the middle ages.
- **3.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 14-19 ("in ... only.")
 - **B.** Lines 20-24 ("There ... France.")
 - **C.** Lines 29-32 ("It ... this.")
 - **D.** Lines 74-83 ("It ... Revolution.")
- **4.** It can be inferred from the passage that the author most likely views the ruling power as which of the following?
 - **A.** A power that exhibits mercy to its people
 - **B.** An oppressive unjust power that oppresses its people
 - **C.** A power formed of woodmen, farmers, and the working class
 - **D.** A neutral power that does not heed its people
- 5. The tone in lines 58-66 is best described as
 - **A.** satirical.
 - **B.** skeptical.
 - C. grudging.
 - **D.** condescending.
- **6.** As used in line 33, "attained" most nearly means
 - A. earned.
 - B. won.
 - **C.** achieved.
 - D. reached.

- 7. Based on the passage, which of the following statements about the author's use of metaphors can be made?
 - **A.** The author uses metaphors as a stylistic device.
 - **B.** The author uses metaphors to emphasize the narrative's structure.
 - **C.** The author uses metaphors to persuade the reader of his position.
 - **D.** The author uses metaphors to support concrete evidence.
- **8.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 20-24 ("There ... France.")
 - **B.** Lines 45-48 ("Mere...America:")
 - **C.** Lines 83-86 ("But ... tread:")
 - **D.** Lines 86-89 ("the ... traitorous.")
- **9.** As used in line 86, "tread" most nearly means
 - A. path
 - **B.** journey
 - C. footsteps
 - **D.** parade
- 10. The relationship between the first and second paragraph and the rest of the passage can best be described as
 - **A.** premise followed by opposition.
 - **B.** analogy followed by narrative structure.
 - **C.** assertion followed by supporting evidence.
 - **D.** analysis followed by generalization.

The following passage is taken from The Every-day Life of Abraham Lincoln by Francis F. Browne. The biography recounts the life of the 16th president of the United States, Abraham Lincoln. This passage focuses on his early years before his presidency.

While engaged in the duties of Offutt's store Lincoln began the study of English grammar. There was not a text-book to be obtained in the neighborhood; but hearing

- 5 that there was a copy of Kirkham's Grammar in the possession of a person seven or eight miles distant he walked to his house and succeeded in borrowing it. L.M. Green, a lawyer of Petersburg, in
- 10 Menard County, says that every time he visited New Salem at this period Lincoln took him out upon a hill and asked him to explain some point in Kirkham that had given him trouble. After having mastered
- 15 the book he remarked to a friend that if that was what they called a science he thought he could "subdue another." Mr. Green says that Lincoln's talk at this time showed that he was beginning to think of
- 20 a great life and a great destiny. Lincoln said to him on one occasion that all his family seemed to have good sense but somehow none had ever become distinguished. He thought perhaps he
- 25 might become so. He had talked, he said, with men who had the reputation of being great men, but he could not see that they differed much from others. During this year he was also much engaged with
- 30 debating clubs, often walking six or seven miles to attend them. One of these clubs held its meetings at an old storehouse in New Salem, and the first speech young Lincoln ever made was made
- 35 there. He used to call the exercising "practicing polemics." As these clubs were composed principally of men of no education whatever, some of their "polemics" are remembered as the most
- 40 laughable of farces. Lincoln's favorite newspaper at this time was the "Louisville Journal." He received it regularly by mail, and paid for it during a

- number of years when he had not money 45 enough to dress decently. He liked its politics, and was particularly delighted with its wit and humor, of which he had the keenest appreciation.
- At this era Lincoln was as famous for his skill in athletic sports as he was for his love of books. Mr. Offutt, who had a strong regard for him, according to Mr. Arnold, "often declared that his clerk, or salesman, knew more than any man in
- 55 the United States, and that he could outrun, whip, or throw any man in the county. These boasts came to the ears of the 'Clary Grove Boys,' a set of rude, roystering, good-natured fellows, who
- 60 lived in and around Clary's Grove, a settlement near New Salem. Their leader was Jack Armstrong, a great square-built fellow, strong as an ox, who was believed by his followers to be able to
- 65 whip any man on the Sangamon river.

 The issue was thus made between
 Lincoln and Armstrong as to which was
 the better man, and although Lincoln
 tried to avoid such contests, nothing but
- 70 an actual trial of strength would satisfy their partisans. They met and wrestled for some time without any decided advantage on either side. Finally Armstrong resorted to some foul play,
- 75 which roused Lincoln's indignation.
 Putting forth his whole strength, he seized the great bully by the neck and holding him at arm's length shook him like a boy. The Clary Grove Boys were
- 80 ready to pitch in on behalf of their champion; and as they were the greater part of the lookers-on, a general onslaught upon Lincoln seemed imminent. Lincoln backed up against
- 85 Offutt's store and calmly awaited the attack; but his coolness and courage made such an impression upon Armstrong that he stepped forward, grasped Lincoln's hand and shook it
- 90 heartily, saying: 'Boys, Abe Lincoln is the best fellow that ever broke into this settlement. He shall be one of us.'"

- **11.** Lines 9-14 imply which of the following about Lincoln's character?
 - **A.** He was impatient with tedious components of grammar.
 - **B.** He was ignorant to the ethics of making a request.
 - **C.** He was eager to learn and make an effort.
 - **D.** He was demanding when it came to material he did not comprehend.
- **12.** Which of the following statements is best supported by the passage?
 - **A.** Lincoln faced many obstacles in his search for knowledge.
 - **B.** Lincoln was a man of many talents that ranged across disciplines.
 - **C.** Mr. Offutt remained Lincoln's primary supporter.
 - **D.** Jack Armstrong was meant to test Lincoln's physical capacity.
- **13.** The chief theme of the passage could best be described as
 - **A.** discrediting Lincoln's past experiences.
 - **B.** delineating Lincoln's struggles.
 - **C.** documenting Lincoln's growth.
 - **D.** observing Lincoln's interactions with other people.
- 14. The author inserts the quote in lines 53-92 when referring to Mr. Offutt primarily to The primary purpose of inserting a quote in lines 53-92 is to
 - **A.** provide an in-context example of Lincoln's confrontation with Jack Armstrong to support the text.
 - **B.** emphasize an abstract concept in relation to Lincoln's character.
 - **C.** express the importance of Jack Armstrong in Lincoln's life.
 - **D.** outline the main idea of the passage.

- **15.** Preceding line 85, Jack Armstrong's character would best be described as
 - **A.** hypocritical and cynical.
 - **B.** pompous and devious.
 - **C.** resigned and calm.
 - **D.** indifferent and sly.
- **16.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 61-65 ("Their ... river.")
 - **B.** Lines 66-71 ("The ... partisans.")
 - C. Lines 71-75 ("They ... indignation.")
 - **D.** Lines 84-86 ("Lincoln ... attack;")
- 17. In line 14, "trouble" is closest in meaning to
 - A. weakness.
 - **B.** unrest.
 - C. inconvenience.
 - **D.** difficulty.
- 18. According to the quote from line 53 to 92, it can be inferred about Lincoln's character that
 - **A.** he was often prone to conflict.
 - **B.** he felt the need to prove himself among other men.
 - **C.** he exhibited a nonchalant and non-confrontational exterior that elicits reverence.
 - **D.** he feared speaking out in front of others.
- 19. Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 71-73 ("They ... side.")
 - **B.** Lines 76-79 ("Putting ... boy.")
 - C. Lines 79-84 ("The ... imminent.")
 - **D.** Lines 84-90 ("Lincoln ... saying:")
- **20.** In line 77, "seized" is closest in meaning to
 - **A.** grab.
 - **B.** capture.
 - C. confiscate.
 - D. abduct.

Passage 1 is edited and taken from On the Origin of Species By Means of Natural Selection on the complex relationship between plants and animals and Passage 2 is edited and taken from Criticisms on "The Origin of Species" by Thomas Henry Huxley which presents a critical reading of the theory of animal adaptation.

Passage 1

I am tempted to give one more instance showing how plants and animals, most remote in the scale of nature, are bound together by a web of complex relations.

- 5 I shall hereafter have occasion to show that the exotic Lobelia fulgens, in this part of England, is never visited by insects, and consequently, from its peculiar structure, never can set a seed.
- 10 Many of our orchidaceous plants absolutely require the visits of moths to remove their pollen-masses and thus to fertilize them. I have, also, reason to believe that humble-bees are
- 15 indispensable to the fertilization of the heartsease (Viola tricolor), for other bees do not visit this flower. From experiments which I have tried, I have found that the visits of bees, if not
- 20 indispensable, are at least highly beneficial to the fertilization of our clovers; but humble-bees alone visit the common red clover (Trifolium pratense), as other bees cannot reach the
- 25 nectar. Hence I have very little doubt, that if the whole genus of humble-bees became extinct or very rare in England, the heartsease and red clover would become very rare, or wholly disappear.
- 30 The number of humble-bees in any district depends in a great degree on the number of field-mice, which destroy their combs and nests; and Mr. H. Newman, who has long attended to the
- 35 habits of humble-bees, believes that "more than two thirds of them are thus destroyed all over England." Now the number of mice is largely dependent, as everyone knows, on the number of cats;

- 40 and Mr. Newman says, "Near villages and small towns I have found the nests of humble-bees more numerous than elsewhere, which I attribute to the number of cats that destroy the mice."
- 45 Hence it is quite credible that the presence of a feline animal in large numbers in a district might determine, through the intervention first of mice and then of bees, the frequency of
- 50 certain flowers in that district!

In the case of every species, many different checks, acting at different periods of life, and during different seasons or years, probably

- 55 come into play; someone check or some few being generally the most potent, but all concurring in determining the average number or even the existence of the species. In some cases it can be
- on the same species in different districts.

 When we look at the plants and bushes clothing an entangled bank, we are tempted to attribute their proportional
- 65 numbers and kinds to what we call chance. But how false a view is this! Everyone has heard that when an American forest is cut down, a very different vegetation springs up; but it
- 70 has been observed that the trees now growing on the ancient Indian mounds, in the Southern United States, display the same beautiful diversity and proportion of kinds as in the
- 75 surrounding virgin forests. What a struggle between the several kinds of trees must here have gone on during long centuries, each annually scattering its seeds by the thousand; what war
- 80 between insect and insect—between insects, snails, and other animals with birds and beasts of prey—all striving to increase, and all feeding on each other or on the trees or their seeds and
- 85 seedlings, or on the other plants which first clothed the ground and thus checked the growth of the trees!

Passage 2

Cats catch mice, small birds and the like, very well. Teleology tells us 90 that they do so because they were expressly constructed for so doing—that they are perfect mousing apparatuses, so perfect and so delicately adjusted that no one of their organs could be altered, 95 without the change involving the alteration of all the rest. The theory of animal adaptation affirms on the contrary, that there was no express construction concerned in the matter; 100 but that among the multitudinous variations of the Feline stock, many of which died out from want of power to resist opposing influences, some, the cats, were better fitted to catch mice 105 than others, whence they throve and persisted, in proportion to the advantage over their fellows thus offered to them. Far from imagining that cats exist "in order" to catch mice well, the theory of 110 animal adaptation supposes that cats exist "because" they catch mice well mousing being not the end, but the condition, of their existence. And if the cat type has long persisted as we know 115 it, the interpretation of the fact upon the theory of animal adaptation principles would be, not that the cats have remained invariable, but that such varieties as have incessantly occurred 120 have been, on the whole, less fitted to

If we apprehend the spirit of the "Origin of Species" rightly, then,
125 nothing can be more entirely and absolutely opposed to Teleology, as it is commonly understood, than the theory of animal adaptation.

get on in the world than the existing

stock.

- 21. The author's initial assertion in lines 1-4 are emphasized later in the text by
 - **A.** mentioning the conclusive role cats and consequently other animals play in the overall appearance of certain flowers.
 - **B.** alluding to the visits moths and bees make to flowers.
 - **C.** suggesting there is an increasing presence of different plant genera.
 - **D.** emphasizing the rise in vegetation and diversity within forests.
- 22. In line 6, the author of Passage 1 mentions "Lobelia fulgens" in order to
 - **A.** put forth a counter argument followed by a reasoning.
 - **B.** provide a specific example followed by a general conclusion.
 - **C.** set the tone of the passage followed by an in-depth analysis.
 - **D.** state a scientific development followed by an in-depth analysis.
- **23.** Passage 1 is best described as
 - **A.** a definition of a concept.
 - **B.** an example of a particular method.
 - **C.** a description of a process.
 - **D.** a discussion on a particular theory.

- 24. What is best described as the reason the author in passage 1 chooses to mention the "humble-bees" in line 26?
 - **A.** The author provides an example of the effect of animals on the propagation of plants.
 - **B.** The author sheds light on the destruction of combs and nests.
 - **C.** The author clarifies the misconception related to humble-bees.
 - **D.** The author presents a solution to keep humble-bees safe.
- **25.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 17-25 ("From...nectar.")
 - **B.** Lines 30-33 ("The ... nests;")
 - **C.** Lines 33-37 ("and ... England.")
 - **D.** Lines 40-44 ("and ... mice.")
- **26.** As used in line 34, "attended" most nearly means
 - **A.** appeared.
 - B. managed.
 - C. accompanied.
 - **D.** looked after.
- 27. One characteristic of Passage 1 that may make it difficult to fully comprehend is the author's assumption throughout that readers
 - **A.** are familiar with the process of plant propagation.
 - **B.** have a well-developed understanding of humble-bees.
 - **C.** are acquainted with ancient Indian mounds.
 - **D.** have read Mr. H. Newman's work.

- **28.** What is the relationship between Passage 1 and Passage 2?
 - **A.** Passage 1 presents an argument and Passage 2 refutes it.
 - **B.** Passage 1 discusses a scientific phenomenon and Passage 2 presents an opposing theory.
 - **C.** Passage 1 delineates a problem and Passage 2 offers a solution.
 - **D.** Passage 1 indicates a cause and Passage 2 manifests the effect.
- **29.** The author of Passage 2 most likely mentions "Teleology" to
 - **A.** express an opposing premise to the theory of animal adaptation.
 - **B.** bolster the theory of Teleology.
 - **C.** reject a premise on the grounds of evidence.
 - **D.** solidify the importance of Teleology in relation to the theory of animal adaptation.
- **30.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 89-96 ("Teleology ... rest.")
 - **B.** Lines 96-99 ("The ... matter;")
 - C. Lines 108-113 ("Far ... existence.")
 - **D.** Lines 113-122 ("And ... stock.")
- **31.** As used in line 99, "construction" most nearly means
 - A. establishment.
 - B. building.
 - C. interpretation.
 - **D.** structure.

The following passage is taken from a collection of works compiled by The New York Times called The Current History of the European War. The passage is from the article What the Economic Effects May Be by Irving Fisher on the financial standing in 1915.

It may well be that among the economic consequences of the war there will be some national bankruptcies, and that among the political consequences will 5 be revolutions. High prices, high taxes, low wages, and unemployment make an ominous combination. We may be sure that discontent will be profound and widespread. This discontent is pretty 10 sure to lead, especially in the defeated nations where there is no compensating "glory," to strong revolutionary movements just as was the case in Russia after her defeat by Japan. 15 Whether or to what extent these movements, in which "Socialism" in the

various meanings of that word is sure to play a part, will succeed, depends on the relative strength of opposing tendencies

20 which cannot yet be measured. One possible if not probable result may be, as I suggested in THE TIMES two weeks ago, some international device to secure disarmament and to safeguard

25 peace.

Though part of the losses to Europe will be permanent, her chief loss will be coterminous with the war. She will, therefore, seek ways and means to fill in 30 this immediate hole in her income in order to "get by." To do this she must borrow; that is, she must secure her present bread and butter from us and other nations and arrange to repay later 35 out of the fruits of peace. She can stint herself, but not enough to meet the situation. She must borrow. And in one way and another she will satisfy this necessity by borrowing in the United 40 States.

Most of the strange and unprecedented phenomena which we have witnessed in the last month, in rapid succession, are due to this pressing necessity of the

45 belligerent peoples to cash in now and trust to good fortune to pay later. As soon as the war became even probable Europe tried to cash in on our securities. The pressure for our gold pushed it

50 toward Europe faster than it could move. Exchange jumped to the goldshipping point of \$4.89 per pound sterling, and did not stop. In some cases it reached \$7. This was partly due to the

55 desire to get our gold and bolster up a credit structure, tottering before the deadly blow of war; but it was also partly due to the need of ready money for supplies of all kinds. This need

60 applies not only to the Governments, but to the individual people. To obtain this ready money they threw back on us the securities they had purchased of us in former years. They wanted us to take

65 back these titles to future income and give them instead titles to present income. Had they secured our gold their next step would have been to spend part of it for supplies, and this would have

70 caused any foreign dealers to whom they applied to place orders with us. The gold then might have turned the exchanges and have been brought back to us in return for our wheat and other
75 products.

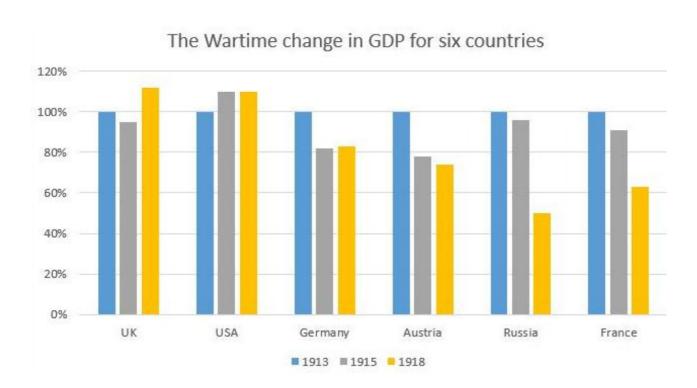
This double transaction is in essence one—a barter of present income in the form of our wheat to Europe for future income in the form of investment

80 securities. It was interfered with by the refusal of the insurance companies to insure the gold and by the closing of Stock Exchanges against the inundating flood of securities. The first difficulty,

85 as to transporting gold, has been largely removed by arranging for drafts against stocks of it kept on both sides of the Atlantic. This will save the need of sending it on risky voyages back and

90 forth, and any final net balances can be

liquidated after the war. The second obstacle, the closure of the Stock Exchanges, is more formidable, but cannot completely or permanently 95 prevent the transactions which so many people on both sides are anxious to consummate. Curb markets and limited cash sales on the Exchanges themselves are doing some of this business, and, 100 sooner or later, much more will be done, whether the Exchanges are open or not. Europe needs our wheat and cannot pay for it except with securities, partly because her own industry is paralyzed, partly because ocean transportation is difficult.



Source: Scott Minerd/Guggenheim

- **32.** According to line 9, "discontent" refers to
 - **A.** the combination of consequences.
 - **B.** the bankruptcy.
 - C. revolution movements.
 - D. war.
- **33.** Which statement best describes why "glory" in line 12 is placed in quotes?
 - **A.** It is extracted from a larger quote.
 - **B.** It is a stylistic device used to express irony.
 - **C.** The quoted word refers to the premise of the passage.
 - **D.** The quoted word is of a foreign language origin.
- **34.** As used in line 32, "secure" most nearly means
 - A. obtain.
 - **B.** fasten.
 - **C.** protect.
 - D. connect.
- **35.** According to the passage, possible success of the revolutionary movements is contingent on
 - **A.** the use of international devices.
 - **B.** the phenomenon of safeguarding peace.
 - **C.** the presence of immeasurable resistance.
 - **D.** the act of demilitarization.
- **36.** According to line 27, "her" refers to
 - **A.** Europe.
 - **B.** Japan.
 - C. Russia.
 - **D.** socialism.
- 37. It can be logically concluded from the passage that the price of gold increased because
 - **A.** it was difficult to transport.
 - **B.** of the imminent war.
 - **C.** people were selling it.
 - **D.** gold was rare.

- **38.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 26-28 ("Though ... war.")
 - **B.** Lines 54-59 ("This ... kinds.")
 - **C.** Lines 59-61 ("This ... people.")
 - **D.** Lines 71-75 ("The ... products.")
- **39.** In terms of the overall difficulty of transporting gold, it can be inferred that
 - **A.** countries were making it difficult to exchange goods.
 - **B.** the stock market failed to compensate.
 - C. Europe lacked stability.
 - **D.** factors relating to transport and immobility were crucial.
- **40.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 80-84 ("It ... securities.")
 - **B.** Lines 84-88 ("The ... Atlantic.")
 - **C.** Lines 97-101 ("Curb ... not.")
 - **D.** Lines 102-106 ("Europe ... difficult.")
- **41.** As used in line 76, "essence" most nearly means
 - **A.** actuality.
 - **B.** scent.
 - C. elixir.
 - **D.** concentrate.
- **42.** Data in the graph about wartime changes in GDP for six countries most strongly support which of the following statements?
 - **A.** Russia suffered the most extreme drop in GDP post-war in 1918 compared to other countries.
 - **B.** Germany's GDP dropped by over 20% after 1913.
 - **C.** Only USA's GDP increased postwar in 1918.
 - **D.** Austria's GDP dropped by over 20% from 1915 to 1918.

The following edited passage is taken from The Story of Germ Life by H. W. Conn which discusses the concept of bacterial multiplication.

In their method of growth we find one of the most characteristic features. They universally have the power of multiplication by simple division or 5 fission. Each individual elongates and then divides in the middle into two similar halves, each of which then repeats the process. This method of multiplication by simple division is the 0 distinguishing mark which separates the

10 distinguishing mark which separates the bacteria from the yeasts, the latter plants multiplying by a process known as budding.

It is this power of multiplication by
15 division that makes bacteria agents of
such significance. Their minute size
would make them harmless enough if it
were not for an extraordinary power of
multiplication. This power of growth
20 and division is almost incredible. Some

of the species which have been carefully watched under the microscope have been found under favorable conditions to grow so rapidly as to divide every

25 half hour, or even less. The number of offspring that would result in the course of twenty-four hours at this rate is of course easily computed. In one day each bacterium would produce over

30 16,500,000 descendants, and in two days about 281,500,000,000. It has been further calculated that these 281,500,000,000 would form about a solid pint of bacteria and weigh about a

35 pound. At the end of the third day the total descendants would amount to 47,000,000,000,000, and would weigh about 16,000,000 pounds. Of course these numbers have no significance, for

they are never actual or even possible numbers. Long before the offspring reach even into the millions their rate of multiplication is checked either by lack of food or by the accumulation of their

45 own excreted products, which are

injurious to them. But the figures do have interest since they show faintly what an unlimited power of multiplication these organisms have, and thus show us that in dealing with bacteria we are dealing with forces of

almost infinite extent.

This wonderful power of growth is chiefly due to the fact that bacteria feed upon food which is highly organized and already in condition for absorption. Most plants must manufacture their own foods out of simpler substances, like carbonic dioxide (Co2) and water, but

60 bacteria, as a rule, feed upon complex organic material already prepared by the previous life of plants or animals. For this reason they can grow faster than other plants. Not being obliged to make

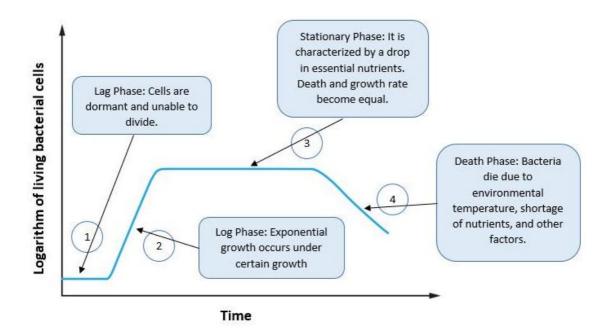
65 their own foods like most plants, nor to search for it like animals, but living in its midst, their rapidity of growth and multiplication is limited only by their power to seize and assimilate this food.

70 As they grow in such masses of food, they cause certain chemical changes to take place in it, changes doubtless directly connected with their use of the material as food. Recognizing that they

75 do cause chemical changes in food material, and remembering this marvelous power of growth, we are prepared to believe them capable of producing changes wherever they get a

80 foothold and begin to grow. Their power of feeding upon complex organic food and producing chemical changes therein, together with their marvelous power of assimilating this material as

85 food, make them agents in Nature of extreme importance.



Source: Lumin

- **43.** The main purpose of the passage is to
 - **A.** examine the division process of bacteria under certain conditions.
 - **B.** argue that data on bacteria is still inconclusive.
 - **C.** discuss the importance of bacterial cells.
 - **D.** present data on the multiplication process.
- **44.** As used in line 43, "checked" most nearly means
 - **A.** halted.
 - **B.** examined.
 - C. confirmed.
 - **D.** investigated.
- 45. The attitude that the author takes throughout the passage is best described as that of
 - **A.** awe and admiration.
 - **B.** indifference and nonchalance.
 - **C.** professionalism and objectivity.
 - **D.** reverence and subjectivity.

- **46.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 28-35 ("In ... pound.")
 - **B.** Lines 38-41 ("Of course ... numbers.")
 - **C.** Lines 64-69 ("Not ... food.")
 - **D.** Lines 80-86 ("Their ... importance.")
- **47.** As used in line 85, "agents" most nearly means
 - A. companies.
 - **B.** spies.
 - **C.** performers.
 - **D.** catalysts.
- 48. Which of the following is NOT cited in the passage and the graph as a reason bacterial cells stop growing?
 - A. food depreciation
 - **B.** mutations
 - **C.** overabundance of their own excreta
 - **D.** changes in temperature

- **49.** According to the passage, bacterium strength relies on
 - **A.** its ability to divide.
 - **B.** its large quantity.
 - **C.** the presence of food.
 - **D.** its capacity to feed on complex matter.
- **50.** Which choice provides the best evidence for the answer to the previous question?
 - **A.** Lines 19-20 ("This ... incredible.")
 - **B.** Lines 28-31 ("In ... 281,500,000,000.")
 - C. Lines 57-62 ("Most ... animals.")
 - **D.** Lines 64-74 ("Not ... food.")
- **51.** The author most likely mentions numbers in lines 30-38 to
 - **A.** support his premise that bacterial cells need favorable conditions.
 - **B.** provide an estimate of the multiplied bacterial cells.
 - **C.** illustrate the bacterial cells' rapid growth accurately.
 - **D.** add details to the passage.
- **52.** Based on the ideas presented in the passage, the graph
 - **A.** accentuates the validity of the experiment.
 - **B.** presents the long process of multiplication.
 - **C.** supports the information in the passage.
 - **D.** provides new information unrelated to the passage.