I was in the middle of it, very hot, tired, and dirty, when from the other side I heard a sudden shout of “Mark over! Bird to the right!” and the next moment I found myself emerging with a black face and tottering knees on the gravel path of a private garden. Beyond the path was a croquet lawn, and on this lawn I perceived, as through a glass darkly, three figures. The mist cleared from my eyes, and I recognized two of them.

One was the middle-aged Irishman who had traveled down with us in the train. The other was his blue-eyed daughter.

The third member of the party was a man, a stranger to me. By some miracle of adroitness he had captured Aunt Elizabeth, and was holding her in spite of her protests in a workmanlike manner behind the wing.

There are moments and moments. The present one belonged to the more painful variety. Even to my exhausted mind it was plain that there was a need here for explanations. An Irishman’s croquet-lawn is his castle, and strangers cannot plunge in through hedges without inviting comment.

Unfortunately, speech was beyond me. ... The conversation was opened by the other man, in whose restraining hand Aunt Elizabeth now lay, outwardly resigned but inwardly, as I, who knew her haughty spirit, could guess, boiling with baffled resentment. I could see her looking out of the corner of her eye, trying to estimate the chances of getting in one good hard peck with her aquiline beak.

“Come right in,” said the man pleasantly.

“Don’t knock.”

I stood there, gasping. I was only too well aware that I presented a quaint appearance. I had removed my hat before entering the hedge, and my hair was full of twigs and other foreign substances. My face was moist and grimy. My mouth hung open. My legs felt as if they had ceased to belong to me.

“I must apol— ...” I began, and ended the sentence with gulps.

The elderly gentleman looked at me with what seemed to be indignant surprise. His daughter appeared to my guilty conscience to be looking through me. Aunt Elizabeth sneered. The only friendly face was the man’s.

He regarded me with a kindly smile, as if I were some old friend who had dropped in unexpectedly.

“Take a long breath,” he advised.

I took several, and felt better.

“I must apologize for this intrusion,” I said successfully. “Unwarrantable” would have rounded off the sentence neatly, but I would not risk it. It would have been mere bravado to attempt unnecessary words of five syllables. I took in more breath. “The fact is, I didn’t know there was a private garden beyond the hedge. If you will give me my hen ...”

I stopped. Aunt Elizabeth was looking away, as if endeavoring to create an impression of having nothing to do with me. I am told by one who knows that hens cannot raise their eyebrows, not having any; but I am prepared to swear that at this moment Aunt Elizabeth raised hers. I will go further. She sniffed.

“Here you are,” said the man. “Though it’s hard to say good-by.”

He held out the hen to me, and at this point a hitch occurred. He did his part, the letting go, all right. It was in my department, the taking...
hold, that the thing was bungled. Aunt Elizabeth slipped from my grasp like an eel, stood for a moment eyeing me satirically with her head on one side, then fled and entrenched herself in some bushes at the end of the lawn.

There are times when the most resolute man feels that he can battle no longer with fate; when everything seems against him and the only course is a dignified retreat. But there is one thing essential to a dignified retreat. You must know the way out.

1. The words “adroitness” and “workmanlike” (lines 15 - 17) help establish the narrator’s first impression of the stranger as
   (A) a rather harsh person.
   (B) a longtime chicken farmer.
   (C) a person similar to the narrator in tastes.
   (D) at ease with rural life.

2. The statement “There are moments and moments. The present one belonged to the more painful variety,” (lines 19 - 20) serves to
   (A) reveal the nature of the relationship between the narrator and the Irishman.
   (B) indicate that the tone of the passage is about to change.
   (C) foreshadow the narrator’s awkward exchange with the man holding Aunt Elizabeth.
   (D) introduce the idea that hard work and painstaking efforts are rewarded.

3. The statement “An Irishman’s croquet-lawn is his castle,” (line 23) functions in the passage primarily to
   (A) mock the Irishman for valuing his croquet lawn so highly.
   (B) cause the reader to associate croquet with wealth and royalty.
   (C) describe the circumstances that inspired the narrator’s apology.
   (D) imply that the Irishman lives on his croquet lawn rather than inside his house.

4. As used in line 25, “inviting” most nearly means
   (A) preventing.
   (B) provoking.
   (C) appealing.
   (D) summoning.

5. Based on the passage, the narrator’s descriptions of Aunt Elizabeth serve primarily to
   (A) depict her as possessing human characteristics.
   (B) suggest that she has outsmarted the narrator.
   (C) elicit sympathy for Aunt Elizabeth.
   (D) contrast with the narrator’s descriptions of himself.

6. Which choice provides the best evidence for the answer to the previous question?
   (A) Lines 31 - 34 (“I could see...aquiline beak”)
   (B) Lines 37 - 41 (“I stood there...other foreign substances”)
   (C) Lines 65 - 69 (“I am told...She sniffed”)
   (D) Lines 72 - 75 (“He held out...the thing was bungled”)

7. The sentences “Unwarrantable’ would have...words of five syllables” (lines 56 - 59) primarily serve to convey the idea that the narrator
   (A) is still exhausted from his physical exertions.
   (B) does not want to seem pretentious.
   (C) enjoys talking to strangers.
   (D) does not want to bore his audience.

8. What is the narrator’s attitude toward the Irishman, his daughter, and the stranger holding Aunt Elizabeth?
   (A) Earnest and mortified
   (B) Resentful and intimidated
   (C) Foolish and presumptuous
   (D) Respectful and demure

9. As used in line 72, “hitch” most nearly means
   (A) barrier.
   (B) interlude.
   (C) setback.
   (D) catch.

10. In regards to the narrator’s relationship with Aunt Elizabeth, the narrator can be compared to a
    (A) romantic pursuing his unrequited love.
    (B) hunter being outmaneuvered by his prey.
    (C) warrior meeting his opponent on a battlefield.
    (D) clown performing tricks for an audience.

11. The narrator would most likely agree with which of the following statements regarding Aunt Elizabeth?
    (A) She is more cooperative than most other chickens.
    (B) She is less intelligent than others believe her to be.
    (C) She eludes the narrator out of resentment and obstinacy.
    (D) She would rather live with the Irishman and his daughter than with the narrator.
Refer to the passage below to answer questions 12 - 21.

This passage is adapted from Lam Chong (trans. Kristen Chan), “China’s Independent Journalists Face High Risks—And are in High Demand,” originally published on inmediahk.net in 2016. This English translation was published in Global Voices on May 26, 2016.

An experienced Chinese journalist recently told me that nearly all major news stories that captured public attention in the past three years were written by independent journalists who have no legal status in China.

As propaganda authorities have become increasingly unreasonable and numerous journalists have received jail time for doing journalistic work, more and more professional journalists have either abandoned or transformed their careers. While some have moved into management positions at major online news portals, others have left media outlets and started writing and distributing independent investigative reports by making use of social media.

Although the people in the latter group are journalists by training and by trade, they do not fit China’s legal framework for what constitutes a journalist. Indeed, it is illegal for a person to identify as a journalist if he or she does not hold a press card. All journalists must hold a press identity card issued by registered media outlets, otherwise it is illegal for them to call themselves journalists. The press card must be renewed annually by the journalist’s work unit or it will expire.

At a recent conference, I met a number of independent journalists from mainland China. They identified themselves using terms like “writer”, “grassroots historian”, “interviewer” and other monikers to avoid using the term “journalist” to describe their work.

One type among this group is similar to those independent journalists working in Hong Kong. They choose and research topics according to their own liking. Rather than pursuing “hot topics”, they typically follow the convention of reportage literature, by researching historical events such as grassroots stories from the Anti-Rightist Campaign and Cultural Revolution, or the history and culture of a particular place that has been neglected by the general public.

Another common path for independent journalists in China is to work as an informal media outlet sub-contractor. These journalists have close connections with editors or management staff from more established media outlets that cannot initiate their own investigative reports because of internal censorship. However, they do have budgets to buy content like individual interviews, photos, and features from outside writers and pay famous bloggers to use their platforms. Hence this group of independent journalists can make a living by selling their reports to conventional media outlets or portal sites.*

According to existing regulations, portal sites cannot conduct original news reports and hence cannot have their own reporter teams. Yet, they have paid columns or paid special features for independent writers to fill in the content. For example, reports from the WeChat public platform “Qianjiejihao” or “No.1 on front street” are frequently quoted by news portals such as Ifeng, QQ and even Xinhua. The platform, which describes itself as “the Eden of a group of oppressed social reporters,” publishes posts produced by teams, some of whom may be affiliated with state media.

There are no reliable figures on how many journalists work in this mode in China, but it is clear that they are walking on a tightrope which carries immense risk, but can also yield opportunities.

Independent journalists have no institutional protection. The censorship system within media outlets is a form of control, but it also protects journalists from touching sensitive issues that can get them into trouble. The bureaucratic structure makes certain that responsibility is shared at all levels—editors and management staff work to ensure that news coverage will not break local laws or offend state or party officials. This minimizes the part that the journalists have to take on their shoulders.

Outside the umbrella of the media institution, independent journalists face many more risks. After the introduction of China’s Rumor and Libel Regulation in September 2013, which criminalized rumors and defamatory content that has been reposted 500 times or more, reporting on sensitive stories became much more dangerous for them.

The growth of the independent journalism sector depends on individual courage, but it also benefits from developing media and communication ecologies. More and more, breaking news circulates first via social media. Similar to other parts of the world, the conventional media sector is withering in the face of competition from online media—this may be even more pronounced in China, where censorship practices have made state-affiliated media increasingly rigid in recent years.

And in contrast to conventional media outlets, where sensitive content often never makes it to the printed page, sensitive online content is deleted after publication. A popular post that touches on sensitive topics can reach tens or even hundreds of thousands of readers within a few hours on WeChat before the web censor steps in.

In the face of rapid growth of capital
investment in the Internet and technology sector in China, content is king and news content is also essential to the development of online platforms. As independent journalists are more flexible and courageous in picking up social topics, including sensitive ones, they are welcomed by Internet portals. Thus their work is high-risk — and in high demand.

Portal sites: Web sites that assimilate information from other sites in a uniform manner. For example, a news portal would connect users to reports from many media outlets.

12. The primary purpose of the passage is to
(A) praise the bravery and ingenuity of independent journalists in China.
(B) explore the relationship between censorship and journalistic reporting in China.
(C) describe recent government regulations that specifically target independent journalists.
(D) explain how the proliferation of news portals has improved journalism in China.

13. As used in line 3, “captured” most nearly means
(A) expressed.
(B) apprehended.
(C) represented.
(D) attracted.

14. The passage is written from the perspective of
(A) a writer who is outside of China.
(B) a Chinese government official.
(C) an independent Chinese journalist.
(D) a foreigner who is working in China.

15. According to the passage, some journalists in China have reacted to increased pressure from authorities with
(A) apathy and indifference.
(B) rebellion and insurrection.
(C) resourcefulness and subterfuge.
(D) understanding and sympathy.

16. The author indicates that some independent journalists in China identify as “writers,” “grassroots historians,” and “interviewers” (lines 30 – 33) because
(A) the term “journalist” carries negative connotations.
(B) they cannot lawfully call themselves “journalists.”
(C) Chinese censorship laws do not apply to writers, historians, or interviewers.
(D) those who call themselves “journalists” tend to make very little money.

17. As used in line 38, “follow the convention” most nearly means
(A) adhere to the practices.
(B) copy the habits.
(C) keep track of the rules.
(D) accompany the customs.

18. According to the passage, the relationship between many registered media outlets and independent journalists in China is best described as
(A) friendly but not collaborative.
(B) intentionally shrouded in mystery.
(C) mercilessly competitive.
(D) one of communication and cooperation.

19. Which choice provides the best evidence for the answer to the previous question?
(A) Lines 20 – 22 (“Indeed...card”)
(B) Lines 44 – 49 (“Another...outlets”)
(C) Lines 77 – 80 (“The censorship...trouble”)
(D) Lines 96 – 99 (“The growth...ecologies”)

20. Paragraph 7 (lines 58 – 70) indicates that
(A) the works of independent journalists are frequently published on major news portals.
(B) many portal sites will illegally hire independent journalists for short-term projects.
(C) WeChat is a large, state-sponsored public platform that publishes works by independent journalists.
(D) many Chinese journalists are now hired by news portals rather than conventional media outlets.

21. Which of the following provides the best support for the “immense risk” that many independent journalists take in China?
(A) Lines 81 – 85 (“bureaucratic...officials”)
(B) Lines 90 – 95 (“After the...them”)
(C) Lines 103 – 106 (“this may...years”)
(D) Lines 119 – 122 (“As independent...portals”)

269
Refer to the passage below to answer questions 22–32.

This passage is adapted from Henri Bergson, *Dreams*, originally published in 1914. Bergson is describing studies that attempt to discover the physiological processes behind dreaming.

Thirty or forty years ago, M. Alfred Maury and, about the same time, M. d’Hervey, of St. Denis, had observed that at the moment of falling asleep these colored spots and moving forms consolidate, fix themselves, take on definite outlines, the outlines of the objects and of the persons which people our dreams. But this is an observation to be accepted with caution, since it emanates from psychologists already half asleep.

More recently an American psychologist, Professor Ladd, of Yale, has devised a more rigorous method, but of difficult application, because it requires a sort of training. It consists in acquiring the habit on awakening in the morning of keeping the eyes closed and retaining for some minutes the dream that is fading from the field of vision and soon would doubtless have faded from that of memory. Then one sees the figures and objects of the dream melt away little by little into phosphenes, identifying themselves with the colored spots that the eye really perceives when the lids are closed. One reads, for example, a newspaper; that is the dream. One awakens and there remains of the newspaper, whose definite outlines are erased, only a white spot with black marks here and there; that is the reality. Or our dream takes us upon the open sea—round about us the ocean spreads its waves of yellowish gray with here and there a crown of white foam. On awakening, it is all lost in a great spot, half yellow and half gray, sown with brilliant points. The spot was there, the brilliant points were there. There was really presented to our perceptions, in sleep, a visual dust, and it was this dust which served for the fabrication of our dreams.

Will this alone suffice? Still considering the sensation of sight, we ought to add to these visual sensations which we may call internal all those which continue to come to us from an external source. The eyes, when closed, still distinguish light from shade, and even, to a certain extent, different lights from one another. These sensations of light, emanating from without, are at the bottom of many of our dreams. A candle abruptly lighted in the room will, for example, suggest to the sleeper, if his slumber is not too deep, a dream dominated by the image of fire, the idea of a burning building. Permit me to cite to you two observations of M. Tissié on this subject:

"B—Léon dreams that the theater of Alexandria is on fire; the flame lights up the whole place. All of a sudden he finds himself transported to the midst of the fountain in the public square; a line of fire runs along the chains which connect the great posts placed around the margin. Then he finds himself in Paris at the exposition, which is on fire. He takes part in terrible scenes, etc. He wakes with a start; his eyes catch the rays of light projected by the dark lantern which the night nurse flashes toward his bed in passing. M—Bertrand dreams that he is in the marine infantry where he formerly served. He goes to Fort-de-France, to Toulon, to Loriet, to Crimea, to Constantinople. He sees lightning, he hears thunder, he takes part in a combat in which he sees fire leap from the mouths of cannon. He wakes with a start. Like B., he was wakened by a flash of light projected from the dark lantern of the night nurse."

Such are often the dreams provoked by a bright and sudden light.

Very different are those which are suggested by a mild and continuous light like that of the moon. A. Krauss tells how one day on awakening he perceived that he was extending his arm toward what in his dream appeared to him to be the image of a young girl. Little by little this image melted into that of the full moon which darted its rays upon him. It is a curious thing that one might cite other examples of dreams where the rays of the moon, caressing the eyes of the sleeper, evoked before him virginal apparitions. May we not suppose that such might have been the origin in antiquity of the fable of Endymion—Endymion the shepherd, lapped in perpetual slumber, for whom the goddess Selene, that is, the moon, is smitten with love while he sleeps?
22. Based on the passage, it can be inferred that the author views dreams as
(A) highly metaphorical and dependent on poetical language.
(B) dependent on the dreamer’s cultural and historical environment.
(C) experiences unique to every individual.
(D) phenomena that can be attributed to rational causes.

23. As used in line 7, “people” most nearly means
(A) crowd.
(B) populate.
(C) individualize.
(D) humanize.

24. The author’s stance on Maury’s and d’Hervey’s work—outlined in paragraph 1—is best described as
(A) plainly critical.
(B) generally positive.
(C) deeply intrigued.
(D) highly skeptical.

25. According to paragraph 2 (lines 10 -35), Professor Ladd’s main contention about dreams is that
(A) dreams develop from the colors that we discern during sleep.
(B) dreams consist of muted hues with shining spots.
(C) training can help people remember dreams on awakening.
(D) we visualize materials in dreams that are common in our lives.

26. Which choice provides the best evidence for the answer to the previous question?
(A) Lines 13 –18 (“It consists in...memory”)
(B) Lines 18 –22 (“Then one sees...closed”)
(C) Lines 22 –26 (“One reads...reality”)
(D) Lines 31 –32 (“The spot...were there.”)

27. As used in line 34, the word “dust” most nearly means
(A) feather.
(B) dross.
(C) mist.
(D) trickle.

28. Which choice most clearly states the author’s own proposal in the passage about dreams and light?
(A) Dreams are about light-related events that penetrate our eyelids.
(B) People’s dreams in the author’s era were quite frequently about fire.
(C) External light can combine with memories to create dreams.
(D) Sudden flashes of fire cause nightmares; moonlight is preferable.

29. Which choice provides the best evidence for the answer to the previous question?
(A) Lines 42 –44 (“These sensations...dreams”)
(B) Lines 52 –57 (“All of a sudden...fire”)
(C) Lines 64 –66 (“He sees lightning...cannon”)
(D) Lines 73 –76 (“A. Krauss tells...girl”)

30. In paragraph 4 (lines 50 –70), the author quotes descriptions of
(A) the effects of night nurses on two patients.
(B) the terrible memories that two military veterans relive.
(C) two fiery nightmares involving real world events.
(D) two hospital patients’ nightmares in settings that are familiar to them.

31. The main rhetorical effect of the phrase “it is a curious thing” (line 78) is to
(A) convey a sense of wonder.
(B) communicate confusion.
(C) express disapproval.
(D) encourage future thinkers.

32. The author refers to the fable of Endymion (lines 82 –86) primarily to
(A) celebrate a pair of famous lovers.
(B) distinguish between dreams arising from bright and dim light.
(C) demonstrate that dreams represent our deepest longings.
(D) suggest that some dreams may have inspired mythology.
Refer to the passage below to answer questions 33 - 43.

Passage 1 is adapted from Sun Tzu, The Art of War, written around 500 BCE and translated in 1910 by Lionel Giles. Passage 2 is adapted from Niccolò Machiavelli, The Prince, published in 1532 and translated in 1908 by William K. Marriot.

Passage 1

The art of war is of vital importance to the State. It is a matter of life and death, a road either to safety or to ruin. Hence it is a subject of inquiry which can on no account be neglected.

All warfare is based on deception. Hence, when able to attack, we must seem unable; when using our forces, we must seem inactive; when we are near, we must make the enemy believe we are far away; when far away, we must make him believe we are near.

Hold out baits to entice the enemy. Feign disorder, and crush him. If he is secure at all points, be prepared for him. If he is superior in strength, evade him.

If your opponent is of choleric* temper, seek to irritate him. Pretend to be weak, that he may grow arrogant.

If he is taking his ease, give him no rest. If his forces are united, separate them. Attack him where he is unprepared, appear where you are not expected.

In war, practice dissimulation, and you will succeed.

Rapidity is the essence of war: take advantage of the enemy's unreadiness, make your way by unexpected routes, and attack unguarded spots.

Keep your army continually on the move and devise unfathomable plans. Forestall your opponent by seizing what he holds dear, and subtly contrive to time his arrival on the ground.

Walk in the path defined by rule, and accommodate yourself to the enemy until you can fight a decisive battle.

*choleric: irritable, angry

Passage 2

Every one admits how praiseworthy it is in a prince to keep faith, and to live with integrity and not with craft*. Nevertheless our experience has been that those princes who have done great things have held good faith of little account, and have known how to circumvent the intellect of men by craft, and in the end have overcome those who have relied on their word.

If men were entirely good this precept would not hold, but because they are bad, and will not keep faith with you, you too are not bound to observe it with them. Nor will there ever be wanting to a prince legitimate reasons to excuse this non-observance. Of this endless modern examples could be given, showing how many treaties and engagements have been made void and of no effect through the faithlessness of princes; and he who has known best how to employ the fox has succeeded best.

But it is necessary to know well how to disguise this characteristic, and to be a great pretender and dissembler; and men are so simple, and so subject to present necessities, that he who seeks to deceive will always find someone who will allow himself to be deceived. One recent example I cannot pass over in silence. Alexander the Sixth did nothing else but deceive men, nor ever thought of doing otherwise, and he always found victims; for there never was a man who had greater power in asserting, or who with greater oaths would affirm a thing, yet would observe it less; nevertheless his deceits always succeeded according to his wishes, because he well understood this side of mankind.

And you have to understand this, that a prince, especially a new one, cannot observe all those things for which men are esteemed, being often forced, in order to maintain the state, to act contrary to fidelity, friendship, humanity, and religion. Therefore it is necessary for him to have a mind ready to turn itself accordingly as the winds and variations of fortune force it, yet, as I have said above, not to diverge from the good if he can avoid doing so, but, if compelled, then to know how to set about it.

*craft: the skill of deceiving others
33. The author of Passage 1, Sun Tzu, and the author of Passage 2, Machiavelli, could both accurately be described as
(A) advocates trying to start wars.
(B) critics of war and ruthless leadership.
(C) allies devising battle plans for a leader.
(D) pragmatists concerned with longevity.

34. The lack of examples or explanations in Passage 1 primarily serves to
(A) create an impersonal and axiomatic tone.
(B) undermine the passage's central claim.
(C) draw attention to the writer's high status and authority.
(D) emphasize the emotional toughness that is necessary to win wars.

35. As used in line 11, "feign" most nearly means
(A) exaggerate.
(B) conceal.
(C) pretend.
(D) forge.

36. How would Sun Tzu most likely respond to Machiavelli's claim that great leaders "circumvent the intellect of men by craft" (lines 40 - 41)?
(A) With dispassionate concurrence
(B) With some misgivings
(C) With faint praise
(D) With conditional assent

37. Which choice provides the best evidence for the answer to the previous question?
(A) Lines 1 - 2 ("The art...State")
(B) Line 5 ("All warfare...deception")
(C) Lines 13 - 14 ("If he...evade him")
(D) Lines 15 - 16 ("If your...irritate him")

38. In Passage 1, Sun Tzu's advice to "Keep your army continually on the move, and devise unfathomable plans" (lines 27 - 28) most clearly implies that
(A) one's troops will succeed only if they remain in top physical condition.
(B) one's plans for proceeding should be physically and mentally challenging.
(C) one's troops will be more motivated to follow their leader if battle plans are explained.
(D) even one's own troops should be surprised by one's tactics in war.

39. As used in line 46, "observe" most nearly means
(A) commemorate.
(B) pronounce.
(C) maintain.
(D) notice.

40. In paragraph 3 of Passage 2 (lines 54 - 68), Machiavelli identifies which of the following as a reason that people are prone to believing lies?
(A) They want to solve immediate problems.
(B) They tend to be self-centered.
(C) They focus on details rather than seeing the big picture.
(D) They are unsophisticated.

41. Sun Tzu's advice in lines 22 - 23 ("In war...succeed") most closely resembles Machiavelli's advice to
(A) act like Alexander VI.
(B) discern people's motivations.
(C) heed advice from elders.
(D) cultivate a flexible mind.

42. Which choice provides the best evidence for the answer to the previous question?
(A) Lines 43 - 46 ("If men were...them")
(B) Lines 63 - 67 ("for there never...wishes")
(C) Lines 69 - 74 ("And you...religion")
(D) Lines 74 - 79 ("Therefore...about it")

43. On which of the following points would the authors of both passages most likely agree?
(A) Most people are good on a fundamental level.
(B) A leader must always keep in mind the security of future generations.
(C) Leaders must demonstrate courage in order to inspire loyalty.
(D) Maintaining stable government is not always a noble task.
Refer to the passage below to answer questions 44 - 52.

This passage is adapted from “A ‘Smoking Gun’ for Dinosaur Extinction,” Jet Propulsion Laboratory, California Institute of Technology, published in 2003.

It is hard to imagine that one of the largest impact craters on Earth, 180 kilometers (112 miles) wide and 900 meters (3,000 feet) deep, could all but disappear from sight, but it did.

Chicxulub, located on Mexico’s Yucatán peninsula, eluded detection for decades because it was hidden (and at the same time preserved) beneath a kilometer of younger rocks and sediments. Size isn’t the only thing that makes Chicxulub special. Most scientists now agree it’s the “smoking gun” — evidence that a huge asteroid or comet indeed crashed into Earth’s surface 65 million years ago causing the extinction of more than 70 percent of the living species on the planet, including the dinosaurs. This idea was first proposed by the father and son team of Luis and Walter Alvarez in 1980.

Though the buried giant can’t be seen, the impact crater has left subtle clues of its existence on the surface. “When I talk to school children, I describe it like this,” says Dr. Gary Kinsland, a geology professor at the University of Louisiana at Lafayette who has been doing research on Chicxulub since 1994. “Put a bowl on your bed, then throw the sheets and blankets over it. All you’ll probably see of the bowl now is a subtle depression.”

“There is not a big hole anymore,” he continues, “but if you look at the rim of the depression on your bed, you’ll see that it is still in the same position as the rim of the bowl beneath. That’s how surface expression allows us to interpret something about the buried structure.”

The view from space lets scientists see some of Chicxulub’s surface features that are not nearly as obvious from the ground. Satellite images showing a necklace of sink holes, called cenotes, across the Yucatán’s northern tip are what first caught the attention of NASA researchers Drs. Kevin Pope, Adriana Ocampo and Charles Duller in 1990. They were among the first to propose Chicxulub as the impact site linked to the mass extinctions that occurred at the end of the Cretaceous and beginning of the Tertiary geological ages, called the K/T boundary.

“It’s like looking underneath a kilometer of younger rocks and ocean sediments published in 1991 helped convince the scientific world that Chicxulub was the site of the impact that sent life on Earth in a new direction, from the age of dinosaurs to the age of mammals.

Scientists continue to comb through the clues the impact has left behind, some of which show up best from space. “The classic spaceborne synoptic* view,” says Pope, “is what you need to see a large structure like this.” Maps of the region’s wetlands, produced by the spaceborne imaging radar-C (SIR-C) mission in 1994, identified zones of groundwater discharge that correlate with the crater’s structure.

Now researchers are getting their first look at detailed, three-dimensional topographical data from the Shuttle Radar Topography Mission.

“This new image gives us both corroborative evidence of what we expected and also shows up things we haven’t seen before,” says Kinsland. “We’ll be working to get as much out of the data as possible. Anything we learn at the surface tells us more about the buried crater.”

*Chicxulub: pronounced “CHICK-sah-luhb”
*Landsat: satellite program that collect images of Earth
*synoptic: taking a thorough view

Deep-Sea Sediment Layers

Layers of sediment below Blake Nose, a spot off the coast of Florida, as indicated by a core sample taken from 370 feet below the sea bed in 1997 by the Joint Oceanographic Institutions for Deep Earth Sampling

*Tertiary: last “mammal” period
*Cretaceous: last “dinosaur” period
*Fossils of Cretaceous plankton
*tektites: glassy condensation from vaporized rock
*Iron asteroid particles Clay devoid of fossils
*Impact debris including Tertiary microfossils

* Tertiary: first “mammal” period
44. Which choice best summarizes the passage?
(A) A father-son scientific team amassed evidence of a huge asteroid collision with Earth.
(B) Satellite images of Earth helped researchers deduce an event in geologic history.
(C) An asteroid or comet was responsible for the extinction of the dinosaurs.
(D) Researchers have found a large hole that they had not noticed before.

45. The author's central claim that the Chicxulub crater is a "smoking gun" means that it is
(A) a steaming physical remnant of one of the biggest explosions imaginable.
(B) an exhilarating discovery, yet extremely controversial among researchers.
(C) persuasive evidence, similar to a just-used gun found on a murder suspect.
(D) just a bare physical trace of a violent event, like smoke left behind at a shooting.

46. What function does paragraph 2 (lines 5 -17) serve in the passage as a whole?
(A) It explains the strange fact that is introduced in the first paragraph.
(B) It places NASA's later findings in a context of earlier discoveries.
(C) It describes Chicxulub's historical background.
(D) It introduces Chicxulub and explains its significance to science.

47. As used in line 32, "expression" most nearly means
(A) form.
(B) face.
(C) iteration.
(D) narrative.

48. In paragraph 3 (lines 18 – 27), the crater is compared to a blanket-covered bowl primarily to
(A) mimic the way ice formed over and obscured the crater.
(B) model the object that formed the crater using simple household objects.
(C) demonstrate how some of the features of the crater were recognized.
(D) provide an exercise the reader can perform to better understand the scenario.

49. In the context of the passage, the author's use of the figurative phrase "a necklace of sinkholes" (line 37) describes
(A) intricate connections among caverns.
(B) the presence of a string of sparkling ponds.
(C) natural wells occurring in an arc.
(D) a ring of land that encircles a lower area.

50. Which choice provides the best evidence for the answer to the previous question?
(A) Lines 48 -51 ("'We were... Mapper'")
(B) Lines 51 -54 ("'We were... for oil'")
(C) Lines 57 -60 ("'Pope and his... floor'")
(D) Lines 70 -72 ("'The classic... like this'")

51. According to the author, space technology has supported the Chicxulub hypothesis by recording the
(A) orbits of comets and asteroids.
(B) number of wetlands in the Yucatan.
(C) flow of water underground.
(D) composition of the soil in the region.

52. Does the diagram provide support for the hypothesis that a meteorite struck at Chicxulub?
(A) Yes, because its layers of debris indicate a super-massive impact.
(B) Yes, because it adds to the fossil record on dinosaur-era extinction.
(C) No, because it does not describe sediment composition precisely.
(D) No, because it does not indicate the source for the debris.
### Reading Test Scoring Guide

Number correct on the SAT Reading Test: ________

<table>
<thead>
<tr>
<th>Raw Score</th>
<th>Scaled Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>52 - 51</td>
<td>400</td>
</tr>
<tr>
<td>50 - 49</td>
<td>390</td>
</tr>
<tr>
<td>48</td>
<td>380</td>
</tr>
<tr>
<td>47</td>
<td>370</td>
</tr>
<tr>
<td>46 - 45</td>
<td>360</td>
</tr>
<tr>
<td>44 - 43</td>
<td>350</td>
</tr>
<tr>
<td>42 - 41</td>
<td>340</td>
</tr>
<tr>
<td>40 - 38</td>
<td>330</td>
</tr>
<tr>
<td>37</td>
<td>320</td>
</tr>
<tr>
<td>36 - 35</td>
<td>310</td>
</tr>
<tr>
<td>34 - 33</td>
<td>300</td>
</tr>
<tr>
<td>32 - 30</td>
<td>290</td>
</tr>
<tr>
<td>29 - 28</td>
<td>280</td>
</tr>
<tr>
<td>27</td>
<td>270</td>
</tr>
<tr>
<td>26</td>
<td>260</td>
</tr>
<tr>
<td>25 - 24</td>
<td>250</td>
</tr>
<tr>
<td>23 - 22</td>
<td>240</td>
</tr>
<tr>
<td>21</td>
<td>230</td>
</tr>
<tr>
<td>20 - 19</td>
<td>220</td>
</tr>
<tr>
<td>18</td>
<td>210</td>
</tr>
<tr>
<td>17 - 16</td>
<td>200</td>
</tr>
<tr>
<td>15</td>
<td>190</td>
</tr>
<tr>
<td>14</td>
<td>180</td>
</tr>
<tr>
<td>13 - 12</td>
<td>170</td>
</tr>
<tr>
<td>11</td>
<td>160</td>
</tr>
<tr>
<td>10 - 9</td>
<td>150</td>
</tr>
<tr>
<td>8</td>
<td>140</td>
</tr>
<tr>
<td>7</td>
<td>130</td>
</tr>
<tr>
<td>6</td>
<td>120</td>
</tr>
<tr>
<td>5</td>
<td>110</td>
</tr>
<tr>
<td>4 - 1</td>
<td>100</td>
</tr>
</tbody>
</table>

### Writing and Language Test Scoring Guide

Number correct on the SAT Writing and Language Test: ________

<table>
<thead>
<tr>
<th>Raw Score</th>
<th>Scaled Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>400</td>
</tr>
<tr>
<td>43</td>
<td>390</td>
</tr>
<tr>
<td>42</td>
<td>380</td>
</tr>
<tr>
<td>41</td>
<td>370</td>
</tr>
<tr>
<td>40 - 38</td>
<td>360</td>
</tr>
<tr>
<td>37</td>
<td>350</td>
</tr>
<tr>
<td>36</td>
<td>340</td>
</tr>
<tr>
<td>35 - 34</td>
<td>330</td>
</tr>
<tr>
<td>33 - 32</td>
<td>320</td>
</tr>
<tr>
<td>31</td>
<td>310</td>
</tr>
<tr>
<td>30 - 28</td>
<td>300</td>
</tr>
<tr>
<td>27 - 26</td>
<td>290</td>
</tr>
<tr>
<td>25 - 24</td>
<td>280</td>
</tr>
<tr>
<td>23 - 22</td>
<td>270</td>
</tr>
<tr>
<td>21</td>
<td>260</td>
</tr>
<tr>
<td>20</td>
<td>250</td>
</tr>
<tr>
<td>19</td>
<td>230 - 240</td>
</tr>
<tr>
<td>18</td>
<td>220</td>
</tr>
<tr>
<td>17</td>
<td>210</td>
</tr>
<tr>
<td>16</td>
<td>200</td>
</tr>
<tr>
<td>15</td>
<td>190</td>
</tr>
<tr>
<td>14</td>
<td>180</td>
</tr>
<tr>
<td>13</td>
<td>170</td>
</tr>
<tr>
<td>12</td>
<td>160</td>
</tr>
<tr>
<td>11</td>
<td>150</td>
</tr>
<tr>
<td>10</td>
<td>140</td>
</tr>
<tr>
<td>9</td>
<td>130</td>
</tr>
<tr>
<td>8</td>
<td>120</td>
</tr>
<tr>
<td>7</td>
<td>110</td>
</tr>
<tr>
<td>6 - 1</td>
<td>100</td>
</tr>
</tbody>
</table>