



本考科試題共 50 題，每題 2 分，共計 100 分，請依題號作答並將答案以 2B 鉛筆畫記在答案卡上，違者不予計分。

Part A: Grammar and Structure Choice: 60% (2% for each question)

Directions: Questions 1-30 are incomplete sentences. Four words or phrases, marked (A), (B), (C), (D), are given beneath each sentence. You are to choose the ONE word or phrase that best completes the sentence. Then mark your answer on your answer sheet.

1. _____ the vegetation of cities, but also sometimes destroys it.
 (A) Acid rain, which not only damages
 (B) Not only does acid rain damage
 (C) Not only acid rain damages
 (D) Acid rain not only damages
2. _____ of the total number of innocent civilian casualties in the captured city range from 50,000 to 150,000.
 (A) The estimates of how many (B) As the estimates (C) Estimates
 (D) Of the estimates
3. Fossil evidence confirms that the ancient cuttlefish has existed in _____ for more than 20 million years.
 (A) their present form (B) its present form (C) their form present
 (D) its form present
4. A psychiatrist tries to discourage unproductive behavior through the discovery of _____ behave as they do.
 (A) what makes patients (B) what to make patients (C) patients to make what
 (D) making patients what
5. Not until after Franklin D. Roosevelt's presidency _____ lawmakers pass a bill limiting a president to two terms in office.
 (A) that (B) which did (C) did (D) was
6. Heart disease seems to be hereditary _____ it often strikes several generations of the same family.
 (A) that (B) and (C) what (D) such
7. Niagara Falls actually comprises _____ split by Goat Island.
 (A) two waterfalls are natural (B) they are two natural waterfalls
 (C) that two waterfalls are natural (D) two natural waterfalls



8. The historic worth of a single letter may be higher than _____.
- (A) entire a diary (B) it is of an entire diary
(C) that of an entire diary (D) be of an entire diary
9. Of all the important languages in the world, Hebrew has been _____.
- (A) the least studied (B) study the least (C) study less and less
(D) to study the less
10. The achievement of an individual over a lifetime is determined largely by effort, _____ by talent alone.
- (A) instead (B) despite (C) nevertheless (D) not
11. Pricing methods do not depend on quality alone, but reflect varying levels of spending patterns _____.
- (A) as good (B) as well (C) as well also (D) also as well
12. Cars _____ too much pollution will be prohibited.
- (A) that it produces (B) that produces (C) that produce
(D) that producing
13. Mathematicians are sometimes logical people _____ nonetheless often rely on intuition or insight.
- (A) who (B) to whom (C) whom (D) whose
14. The computer has radically affected _____ modern movies are produced.
- (A) is the way (B) that the way (C) which way do (D) the way
15. A paragraph is a portion of a text _____ one or more sentences related to the same idea.
- (A) consists of (B) consisting of (C) which consisting of (D) consisted of
16. Michael Jackson, known as 'King of Pop', enjoyed success and influence _____ among American pop singers and dancers of his era.
- (A) were unparalleled (B) are unparalleled (C) unparalleled
(D) the unparalleled
17. After _____ in the polluted river, fish must be sorted and tested before being sold as food.
- (A) caught (B) they caught (C) they being caught (D) catching
18. Like scientific theorists, painters and musicians often formulate abstract theories _____ the results of their experimentation.
- (A) are explaining (B) to explain (C) explanation of (D) explained
19. Located 15 miles above the ground, _____ from much of the sun's ultraviolet light.



- (A) to shield the Earth's surface by the ozone layer
 (B) shielding the Earth's surface and the ozone layer
 (C) the Earth's surface and the ozone layer shield
 (D) the ozone layer shields the Earth's surface
20. To gain experience, to quicken their reflexes, and to test their skills against real opponents, _____.
- (A) the sparring practiced by boxers
 (B) when boxers practice sparring
 (C) boxers practice sparring
 (D) to practice sparring by boxers
21. _____ are additive and unhealthy remains largely unacknowledged by the tobacco industry.
- (A) Tobacco products (B) If tobacco products (C) Those tobacco products
 (D) That tobacco products
22. Scientists have uncovered an important clue to _____ a vegetarian diet may protect against breast cancer.
- (A) being that (B) why (C) the reason for (D) that
23. Brainwaves are measured in studies of sleep states to determine how deeply _____.
- (A) a sleeping subject (B) is a subject sleeping (C) a subject is sleeping
 (D) sleeping is a subject
24. _____ practical methods of causing a nuclear reaction: fission and fusion.
- (A) There exist two (B) The two (C) Two (D) Two exist
25. Geology _____ the study of the earth and it tries to explain how the earth was formed and how it changes.
- (A) being (B) is (C) it is (D) that is
26. Sleep disorders _____ mood swings as well as be worsened by them.
- (A) can worsen (B) worsen (C) worsened (D) are worsening
27. The ear, _____, also gives us the sense of balance.
- (A) is the chief organ of hearing (B) the chief organ of hearing
 (C) chiefly hearing the organ (D) the organ chiefly hearing
28. With adequate nutrition, young cockroaches grow at a _____.
- (A) rate quickly remarkable (B) quickly remarkable rate
 (C) remarkably quickly rate (D) remarkably quick rate



29. _____ of the astronauts were exposed to the vacuum of space, he or she would succumb immediately to the lack of oxygen and pressure.
 (A) Were one (B) If one (C) Had a single (D) Had one
30. _____ he has conducted many useful research projects in paleontology and related subjects, scientist Stephen Jay Gould is best known for his popular essays.
 (A) Nevertheless (B) Even (C) Although (D) Despite

Part B: Reading Comprehension: 40% (2% for each question)

Directions: In the rest of this exam, you will read two articles. Each one is followed by ten questions about it. For questions 31-50, you are to choose the ONE best answer (A), (B), (C), or (D) to each question. Then mark your answer on your answer sheet.

Questions 31-40 refer to the following article:

Fossils are the remains and traces (such as footprints or other marks) of ancient plant and animal life that are more than 10,000 years old. They range in size from microscopic structures to dinosaur skeletons and complete bodies of enormous animals. Skeletons of extinct species of humans are also considered fossils.

An environment favorable to the growth and later preservation of organisms is required for the occurrence of fossils. Two conditions are almost present: (1) The possession of hard parts, either internal or external, such as bones, teeth, scales, shells, and wood. These parts remain after the rest of the organism has decayed. Organisms that lack hard parts, such as worms and jellyfish, have left a meager geologic record. (2) Quick burial of the dead organism, so that protection is afforded against weathering, bacterial action, and scavengers.

Nature provides many situations in which the remains of animals and plants are protected against destruction. **Of these, marine sediment is by far the most important environment for the preservations of fossils, owing to the incredible richness of marine life.** The beds of former lakes are also prolific sources of fossils. The rapidly accumulating sediments in the channels, floodplains, and deltas of streams bury fresh-water organisms, along with land plants and animals that fall into the water. The beautifully preserved fossil fish from the Green River oil shale of Wyoming in the western United States lived in a vast shallow lake.



The frigid ground in the far north acts as a remarkable preservative for animal fossils. **The woolly mammoth**, a long-haired rhinoceros, and other mammals have been periodically **exposed** in the tundra of Siberia, the hair and red flesh still frozen in cold storage.

Volcanoes often provide environments favorable to fossils preservation. Extensive falls of volcanic ash and coarser particles overwhelm and bury all forms of life, from flying insects to great trees.

Caves have preserved the bones of many animals that died in them and were subsequently buried under a blanket of clay or a cover of dripstone. Predatory animals and early humans alike sought shelter in caves and brought food to **them** to be eaten, leaving bones that paleontologists have discovered.

31. All of the following facts about fossils are referred to by the author in paragraph 1 EXCEPT the fact that they can be _____.
- (A) microscopically small
(B) skeletons of human ancestors
(C) fragile
(D) complete animal bodies
32. The word "traces" in the passage (in line 1, paragraph 1) is closest in meaning to _____.
- (A) structures (B) imprints (C) importance (D) skeletons
33. Which of the following is LEAST likely to be found as a fossil, assuming that all are buried rapidly?
- (A) a worm (B) a dinosaur (C) a woolly mammoth (D) a human ancestor
34. The word "meager" in the passage (in line 5, paragraph 2) is closest in meaning to _____.
- (A) great (B) little (C) different (D) vital
35. The fossil fish from the Green River were probably preserved because they were _____.
- (A) in a deep lake (B) covered by sediment (C) buried slowly
(D) protected by oil
36. Which of the following best expresses the essential information in the highlighted sentence (in paragraph 3)? *Incorrect* answer choices change the meaning in important ways or leave out essential information.
- (A) As plants and animals in marine sediment are incredible, it is easy to preserve fossils in this most important environment.



- (B) Sea sediment is far from the most important environment for the preservation of fossils because of the incredible marine plants and animals.
- (C) As there are a great number of plants and animals in the sea, marine sediments become the most important environment for preserving fossils.
- (D) Sea sediment is surely the most important environment for the preservation of fossils because plants and animals grow in the incredibly rich sea.
37. The author mentions “the woolly mammoth” in the passage (in line 2, paragraph 4) in order to _____.
- (A) illustrate that frigid ground preserves animal fossils
- (B) explain why animals survived in frigid environments
- (C) show how the animals acted as a remarkable preservative
- (D) demonstrate that large animals lived in the far north of the Earth
38. The word “exposed” in the passage (in line 3, paragraph 4) is closest in meaning to _____.
- (A) uncovered (B) photographed (C) located (D) preserved
39. It can be inferred from the passage that a condition that favors fossilization when volcanic ash falls to Earth is _____.
- (A) cold storage (B) high temperature (C) lack of water (D) quick burial
40. The word “them” in the passage (in line 3, paragraph 6) refers to _____.
- (A) predatory animals (B) caves (C) early humans (D) bones.

Questions 41-50 refer to the following article:

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 utilized X-ray microscope 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 microscope 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-ray.

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. 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.

41. According to the passage (paragraph 1), the invention of the visible-light microscope allowed scientists to _____.
- (A) develop the electron microscope later on
 (B) discover single-celled plants and animals they had never seen before
 (C) see viruses directly
 (D) understand more about the distribution of the chemical elements
42. The word “minuscule” in the passage (in line 5, paragraph 1) is closest in meaning to _____.
- (A) circular (B) dangerous (C) tiny (D) complex
43. The word “it” in the passage (in line 8, paragraph 1) refers to _____.
- (A) human perception (B) light (C) the natural world
 (D) a type of microscope
44. The author mentions the visible-light microscope in paragraph 1 in order to _____.
- (A) put the X-ray microscope in a historical perspective
 (B) begin a discussion of sixteenth century discoveries
 (C) show how limited its uses are
 (D) explain how it functioned



45. Why did it take so long to develop the X-ray microscope?
- (A) Funds for research were insufficient.
 (B) Materials used to manufacture X-ray tubes were difficult to obtain.
 (C) The source of illumination was not bright enough until recently.
 (D) X-ray microscopes were too complicated to operate.
46. Which of the following best expresses the essential information in the highlighted sentence (in paragraph 2)? *Incorrect* answer choices change the meaning in important ways or leave out essential information.
- (A) The development of the X-ray microscope slowed so that the development of the electron microscope progressed rapidly.
 (B) The development of the X-ray microscope stopped because of the rapid progress of the electron microscope.
 (C) The development of the electron microscope contributed to the development of the X-ray microscope.
 (D) The rapid progress of the electron microscope was attributed to the halted development of the X-ray microscope.
47. The word “considerably” in the passage (in line 1, paragraph 3) is closest in meaning to _____.
- (A) equally (B) quite (C) respectably (D) tolerably
48. The word “Rather” in the passage (in line 10, paragraph 3) is closest in meaning to _____.
- (A) Somewhat (B) Preferably (C) Instead (D) Significantly
49. The word “those” in the passage (in line 11, paragraph 3) refers to _____.
- (A) properties (B) microscopes (C) investigations (D) X-rays
50. 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 eventually change the illumination range that they now use.
 (D) They will provide information not available from other kinds of microscopes.