

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

I. 單選 (30%)

1. An investigation that is _____ can occasionally yield new facts, even notable ones, but typically the appearance of such facts is the result of a search in a definite direction.
(A) timely (B) unguided (C) consistent (D) uncomplicated (E) subjective
2. The slower-learning monkeys searched _____ but unintelligently: although they worked closely together, they checked only the most obvious hiding places.
(A) competitively (B) impulsively (C) cooperatively (D) deviously (E) craftily
3. It comes as no surprise that societies have codes of behavior; the character of the codes, on the other hand, can often be _____.
(A) predictable (B) explicit (C) admirable (D) unexpected (E) confusing
4. The epidemiologist was worried: despite _____ signs of danger, few countries or companies had taken the possibility of a pandemic seriously, and there was little interest in developing a vaccine.
(A) erroneous (B) mounting (C) token (D) inconclusive (E) residual
5. Most spacecraft are still at little risk of collision with space debris during their operational lifetimes, but given the numbers of new satellites launched each year, the orbital environment in the future is likely to be less _____.
(A) crowded (B) invulnerable (C) protected (D) polluted (E) benign
6. The unexplained digressions into the finer points of quantum electrodynamics are so _____ that even readers with a physics degree would be wise to keep a textbook handy to make sense of them.
(A) uninteresting (B) controversial (C) unsophisticated (D) frustrating (E) humorless
7. Congress is having great difficulty developing a consensus on energy policy, primarily because the policy objectives of various members of Congress rest on such _____ assumptions.
(A) commonplace (B) trite (C) fundamental (D) divergent (E) trivial.
8. During the opera's most famous aria, the tempo chosen by the orchestra's conductor seemed _____, without necessary relation to what has gone before.
(A) arbitrary (B) cautious (C) compelling (D) exacting (E) meticulous
9. Because they had expected the spacecraft Voyager 2 to be able to gather data only about the planets Jupiter and Saturn, scientists were _____ the wealth of information it sent back from Neptune twelve years after leaving Earth.
(A) anxious for (B) confident in (C) thrilled about (D) keen on (E) eager for
10. Only by ignoring decades of mismanagement and inefficiency could investors conclude that a fresh infusion of cash would provide anything other than a _____ solution to the company's financial woes.
(A) complete (B) premature (C) momentary (D) trivial (E) total

II. 複選，全對才給分。選出兩個讓句意通順且句意相近的選項。(15%)

1. Although it does contain some pioneering ideas, one would hardly characterize the work as _____.
(A) orthodox (B) eccentric (C) innovative (D) trifling (E) conventional (F) original
2. The corporation expects only _____ increases in sales next year despite a yearlong effort to revive its retailing business.
(A) dynamic (B) predictable (C) expanding (D) slight (E) modest (F) volatile
3. As my eyesight began to _____, I spent a lot of time writing about it—both poems and “eye journals”—describing what I saw as I looked out through damaged eyes.
(A) deteriorate (B) sharpen (C) improve (D) decline (E) recover (F) adjust
4. Modern agricultural practices have been extremely successful in increasing the productivity of major food crops, yet despite heavy use of pesticides, _____ losses to diseases and insect pests are sustained each year.
(A) incongruous (B) reasonable (C) significant (D) considerable (E) equitable (F) fortuitous
5. The report's most significant weakness is its assumption that the phenomenon under study is _____, when in reality it is limited to a specific geographic area.
(A) unusual (B) exceptional (C) ubiquitous (D) absolute (E) universal (F) restricted

III. 閱讀測驗 (30%)

Article I

Hunting is at best a precarious way of procuring food, even when the diet is supplemented with seeds and fruits. Not long after the last Ice Age, around 7,000 B.C. (during the Neolithic period), some hunters and gatherers began to rely chiefly on agriculture for their sustenance. Others continued the old pastoral and nomadic ways. Indeed, agriculture itself evolved over the course of time, and Neolithic peoples had long known how to grow crops. The real transformation of human life occurred when huge numbers of people began to rely primarily and permanently on the grain they grew and the animals they domesticated. Agriculture made possible a more stable and secure life. With it Neolithic peoples flourished, fashioning an energetic, creative era. They were responsible for many fundamental inventions and innovations that the modern world takes for granted. First, obviously, is systematic agriculture—that is, the reliance of Neolithic peoples on agriculture as their primary, not merely subsidiary, source of food. Thus they developed the primary economic activity of the entire ancient world and the basis of all modern life. With the settled routine of Neolithic farmers came the evolution of towns and eventually cities. Neolithic farmers usually raised more food than they could consume, and their surpluses permitted larger, healthier populations. Population growth in turn created an even

greater reliance on settled farming, as only systematic agriculture could sustain the increased numbers of people. Since surpluses of food could also be bartered for other commodities, the Neolithic era witnessed the beginning of large-scale exchange of goods. In time the increasing complexity of Neolithic societies led to the development of writing, prompted by the need to keep records and later by the urge to chronicle experiences, learning, and beliefs. The transition to settled life also had a profound impact on the family. The shared needs and pressures that encourage extended-family ties are less prominent in settled than in nomadic societies. Bonds to the extended family weakened. In towns and cities, the nuclear family was more dependent on its immediate neighbors than on kinfolk.

1. What does the passage mainly discuss?
 - (A) Why many human societies are dependent on agriculture
 - (B) the changes agriculture brought to human life
 - (C) How Neolithic peoples discovered agriculture
 - (D) Why the first agricultural societies failed
2. According to the passage, agricultural societies produced larger human populations because agriculture
 - (A) created food surpluses
 - (B) created more varieties of food
 - (C) resulted in increases in leisure time
 - (D) encouraged bartering
3. According to the passage, all of the following led to the development of writing EXCEPT the
 - (A) need to keep records
 - (B) desire to write down beliefs
 - (C) extraction of ink from plants
 - (D) growth of social complexity
4. The author mentions all of the following as results of the shift to agricultural societies EXCEPT
 - (A) an increase in invention and innovation
 - (B) emergence of towns and cities
 - (C) development of a system of trade
 - (D) a decrease in warfare
5. Which of the following is true about the human diet prior to the Neolithic period?
 - (A) It consisted mainly of agricultural products
 - (B) It varied according to family size.
 - (C) It was based on hunting and gathering.
 - (D) It was transformed when large numbers of people no longer depended on the grain they grew themselves.

Article II

Naturalists and casual observers alike have been struck by the special relationship between squirrels and acorns (the seeds of oak trees). Ecologists, though, cannot observe these energetic mammals scurrying up and down oak trees and eating and burying acorns without wondering about their complex relationship with trees. Are squirrels dispersers and planters of oak forests or pesky seed predators? The answer is not simple. Squirrels may devour many acorns, but by storing and failing to recover up to 74 percent of them (as they do when seeds are abundant), these arboreal rodents can also aid regeneration and dispersal of the oaks. Their destructive powers are well documented. According to one report, squirrels destroyed tens of thousands of fallen acorns from an oak stand on the University of Indiana campus. A professor there estimated that each of the large white oaks had produced between two and eight thousand acorns, but within weeks of seed maturity, hardly an intact acorn could be found among the fallen leaves. Deer, turkey, wild pigs, and bears also feed heavily on acorns, but do not store them, and are therefore of no benefit to the trees. Flying squirrels, chipmunks, and mice are also unlikely to promote tree dispersal--- whose behavior of caching (hiding) acorns below. The leaf litter often promotes successful germination of acorns --- and perhaps blue jays. Important long-distance dispersers seem to help oaks spread and reproduce. Among squirrels, though, there is a particularly puzzling behavior pattern. Squirrels pry off the caps of acorns, bite through the shells to get at the nutritious inner kernels, and then discard them half-eaten. The ground under towering oaks is often littered with thousands of half-eaten acorns, each one only bitten from the top. Why would any animal waste so much time and energy and risk exposure to such predators as red-tail hawks only to leave a large part of each acorn uneaten? While research is not conclusive at this point, one thing that is certain is that squirrels do hide some of the uneaten portions, and these acorn halves, many of which contain the seeds, may later germinate.

6. What does the passage mainly discuss?
- (A) The ecology of oak trees
 - (B) Factors that determine the feeding habits of Squirrels
 - (C) Various species of animals that promote the dispersal of tree seeds
 - (D) The relationship between squirrels and oak trees
7. According to the passage, what do squirrels do when large quantities of acorns are available?
- (A) They do not store acorns.
 - (B) They eat more than 74 percent of available acorns.
 - (C) They do not retrieve all the acorns that they have stored.
 - (D) They hide acorns in tree cavities.

8. Why does the author mention "the University of Indiana campus" in line 9
- (A) To argue in favor of additional studies concerning the destructive force of squirrels
 - (B) To indicate a place where squirrels can aid seed dispersal of oaks
 - (C) To provide evidence that intact acorns are hard to find under oak trees
 - (D) To support the claim that squirrels can do great damage to oak stands
9. According to the passage, which of the following do squirrels and blue jays have in common?
- (A) They travel long distances to obtain acorns.
 - (B) They promote the reproduction of oak trees.
 - (C) They bury acorns under fallen leaves.
 - (D) They store large quantities of acorns.
10. According to the passage, scientists cannot explain which of the following aspects of squirrel behavior?
- (A) Where squirrels store their acorn caches
 - (B) Why squirrels prefer acorns over other seeds
 - (C) Why squirrels eat only a portion of each acorn they retrieve
 - (D) Why squirrels prefer acorns from a particular species of oak trees

IV. 英翻中 (25%)

Internet has emerged as a medium to connect people across the world for emailing, conferencing, on-line trading, gaming and so on. Internet of Things (IoT) is aimed at making daily lives more sophisticated, flexible and highly reachable to any objects across the world. In IoT, physical objects such as home appliances, vehicles, supply chain items, containers etc. will have digital identities and they will be context aware to sense the environment around them and interact with each other. The objects will be able to respond with the information useful for real-time decision making such as safely changing the lane while driving, automatically switching off the lights in a room when no one is around and so on. Effective monitoring of the environmental conditions to control issues such as pollution, disaster and global warming is another important objective of IoT. For IoT, objects are required to be made smart by embedding intelligence into them using technologies such as Wireless Sensor Networks (WSN) and Radio Frequency IDentification (RFID). In addition to mobile communication technology, Internet will be the primary backbone of the communication channel of IoT. As Internet is a public (and insecure) channel, security is an important concern in IoT infrastructure to communicate the voluminous information across the globe in a secure and timely manner.

[S. Agrawal and M. L. Das, "Internet of Things — A paradigm shift of future Internet applications," in *Nirma University International Conference on Engineering (NUICONE)*, , Dec. 2011, pp.1-7.]