英　　語

問　題

2016年度

〈H28100017〉

注　意　事　項

1. この科目では、この問題冊子のほかに、マーク解答用紙を配布します。
2. 試験開始の指示があるまで、問題冊子および解答用紙には手を触れないでください。
3. 問題は２～11ページに記載されています。試験中に問題冊子の印刷不鮮明、ページの落丁・乱丁及び解答用紙の汚損等に気付いた場合は、手を挙げて監督員に知らせてください。
4. 解答はすべて、ＨＢの黒鉛筆またはＨＢのシャープペンシルで記入してください。
5. マーク解答用紙記入上の注意
   (1) 印刷されている受験番号が、自分の受験番号と一致していることを確認したうえで、氏名欄に氏名を記入してください。
   (2) マーク欄にははっきりとマークしてください。また、訂正する場合は、消しゴムで丁寧に、消し残しがないようによく消してください（砂消しゴムは不可）。

マークする時	●良い	◍悪い	⬭悪い
マークを消す時	○良い	◍悪い	⬭悪い

6. 解答はすべて所定の解答欄に記入してください。所定欄以外に何かを記入した解答用紙は採点の対象外となる場合があります。
7. 試験終了の指示が出たら、すぐに解答をやめ、筆記用具を置き解答用紙を裏返しにしてください。
8. 問題冊子は持ち帰ってください。
9. いかなる場合でも、解答用紙は必ず提出してください。

I. Read Text I, Text II, and Text III. Choose the best option from a – d for questions 1 – 15.
Some of the technical terms marked with an asterisk (*) are defined below Text I.

Text I

[1] Forensic* measurements are relied upon routinely to help determine guilt or innocence in the courtroom. Examples include the mass or weight of drugs possessed by an individual, the speed of a vehicle on the highway, or the concentration of drugs or alcohol in an individual's blood or breath. All require common and relatively routine measurements to determine. No matter how easily performed, however, for those measurements to serve their purpose, they must be interpreted correctly. Even a flawlessly performed measurement can lead to the wrong conclusion if it, or the statutory charge requiring it, is misunderstood. One area where this can cause difficulty is in the enforcement of per se* driving under the influence of alcohol (DUI) laws.

[2] Per se statutes* make it a crime to drive with a breath or blood alcohol concentration exceeding a specified level. This means that the crime itself is defined by a quantity value and that a violation thereof can only be determined through measurement. Breath test machines are commonly employed in jurisdictions* around the world to measure these quantities in motorists. Statutory schemes differ, however, as to the actual quantity indicated by the elements of the crime. Is it blood or breath, and if it is breath, how exactly is breath defined? This can cause confusion leading to what is generally known as the "measurand problem."

[3] Measurements are made to determine the value of some quantity of interest. A quantity is a "property of a phenomenon, body, or substance that has a magnitude that can be expressed as a number and a reference." Common quantities include length, time, mass, and concentration. In this context, the "quantity intended to be measured" is referred to as the measurand.

[4] It is often the case that the measurand is not the quantity that is actually being probed during the physical act of measurement. Instead, it is frequently easier to measure some other quantity and then determine the value of the measurand based upon an established mathematical relationship between the quantity value measured and the measurand value. This relationship is typically characterized by a measurement function. Care needs to be taken not to confuse the "quantity intended to be measured," that is the measurand, with the quantity actually probed or subject to direct measurement.

[5] For example, imagine that you want to measure the volume of a cylinder. As the cylinder's volume is what you intend to measure, it constitutes your measurand. Now, you could measure the cylinder's volume either directly or indirectly. Doing so directly, one might simply fill the cylinder with standardized reference cups of water until it is full so that the volume of water it contains is a direct measure of the volume of the cylinder. Here, the "quantity intended to be measured" and the "quantity subject to measurement" are the same.

[6] (　A　), you might start with the geometrical formula for the volume of a cylinder as a measurement function: $V = \pi r^2 h$. The volume of the cylinder could then be measured indirectly by measuring its height and diameter ($r = D/2$, measurement of the radius is likely to be subject to greater uncertainty than that of the diameter) and using those values in the measurement function. Here, the measurand is still the volume but the quantities actually involved in the physical act of measurement, that is the quantities subject to measurement, are the height and diameter of the cylinder.

[7] When we measure a quantity of interest directly, the measurand and the quantity physically probed are the same. When performing an indirect measurement, one or more other physical quantities are physically probed, yielding intermediate values from which the value of the measurand can be found utilizing the measurement function.

[8] The measurand problem arises where the identities of the quantity subject to measurement and the quantity intended to be measured are distinct but not well specified. It is manifested as the misinterpretation of measurement results due to the failure to clearly define, identify, and/or distinguish the quantities probed and intended to be measured. The measurand problem is a common source of confusion in forensic breath alcohol testing.

[Adapted from Vosk, T., Forrest, A.R.W., Emery, A., and McLane, L.D. (2014) *Journal of Forensic Sciences*, 59: 811-815. doi: 10.1111/1556-4029.12406.]

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[Adapted from WordNet online. Retrieved from http://wordnetweb.princeton.edu/perl/webwn on May 26, 2015.]

Questions 1 – 10 refer to Text I.

1. What does their purpose in paragraph [1] refer to?
   a. to measure a quantity of interest directly
   b. to practice a controlled and fair measurement
   c. to assist in making the right decision in the courtroom
   d. to equalize the measurement and its interpretation

2. What is the relationship between measurement and measurand?
   a. A measurement is a type of measurand.
   b. A measurement is a direct or indirect measure of a measurand.
   c. The words 'measurand' and 'measurement' are synonymous.
   d. A measurand is a numerical value of a measurement.

3. What is the purpose of paragraphs [5] and [6]?
   a. to demonstrate ways of finding the volume of a cylinder
   b. to show cases in which the measurand and the measured quantity are the same or in which they are different
   c. to illustrate ways of showing that direct measurement is more accurate than indirect measurement
   d. to give an example of what a measurement function is

4. Which of the following best fits in blank A in paragraph [6]?
   a. On the other hand
   b. Furthermore
   c. In a similar manner
   d. Subsequently

5. Consider the following scenario: A policeman uses a breath test machine to find out the blood alcohol concentration of a driver. Which of the following is true in this scenario?
   a. The breath test machine is the measurand.
   b. The breath alcohol concentration is the measurand.
   c. A measurement function is necessary.
   d. No measurement function is necessary.

6. Which of the following is least likely to be characterized by a measurement function?
   a. relationship between the volume of a cylinder and its height and diameter
   b. relationship between breath alcohol and blood alcohol concentration
   c. relationship between a quantity value measured and a measurand value
   d. relationship between criminal acts and courtroom procedures

7. When can a flawlessly performed measurement most likely lead to the wrong conclusion?
   a. When the measurement is performed according to routine.
   b. When the measurement result is misunderstood.
   c. When the measurand is confused with the quantity intended to be measured.
   d. When the measured phenomenon corresponds with the measurand.

8. Which of the following is most likely to lead to an unfortunate outcome in breath alcohol measurement?
   a. The measurement was interpreted incorrectly.
   b. The measurement was interpreted flawlessly.
   c. The measurement was performed indirectly.
   d. The measurement was performed involving two physical quantities.

9. Which of the following represents the information structure of Text I?
   a. introduction – method – results – elaboration
   b. introduction – definition – examples – conclusion
   c. definition – example – results – conclusion
   d. example – counterexample – definition – elaboration

10. What is the topic of Text I?
   a. measurements
   b. measurands
   c. the measurand problem
   d. measurement functions

Text II

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[Adapted from Vosk, T., Forrest, A.R.W., Emery, A., and McLane, L.D. (2014) *Journal of Forensic Sciences*, 59: 811-815. doi: 10.1111/1556-4029.12406.]

Questions 11 – 13 refer to Text I and Text II.

11. Which of the following shows jurisdictions where the object being measured is the same as the measurand?
    a. Type I b. Types II and III c. Types I and III d. Type II

12. Which of the following does NOT fit in any of the blanks A, B, or C in the last sentence of Text II?
    a. don't clearly define the measurand
    b. treat the measurand inconsistently
    c. are not properly understood by legal and forensic professionals
    d. distinguish between the measurand and the object of measurement

13. Which of the following statements is consistent with both Text I and Text II?
    a. Direct measurements lead to correct outcomes in forensic investigations.
    b. All jurisdictions should use the same measurands.
    c. The measurement function in Type I jurisdictions is simpler than that in the other jurisdictions.
    d. Type I and Type II jurisdictions can solve the measurand problem by taking blood samples.

Text III

Determining measurement uncertainty generally consists of the following steps:

1. Define the measurand. While this may seem obvious, it is a very important step. The measurand in blood alcohol analysis is generally the concentration (mass/volume) of ethanol in whole venous blood collected from a living person at a specific point in time. This precludes postmortem, arterial, capillary and serum, which would be defined separately.
2. Identify the major components contributing to blood alcohol measurement uncertainty.
3. Quantify the contribution of each major component as SDs (i.e., standard uncertainties).
4. Statistically combine the contribution for each major component and compute the combined uncertainty.
5. Compute the expanded uncertainty using an appropriate coverage factor.
6. Report the results as the best estimate, along with the expanded uncertainty or a confidence interval.

[Adapted from Gullberg, R.G. (2012) *Journal of Analytical Toxicology*, 36: 153-161, doi: 10.1093/jat/bks012.]

Questions 14 – 15 refer to Text I, Text II, and Text III.

14. Which of the following is true of the concepts 'measurand problem' and 'measurement uncertainty'?
    a. They mean the same thing.
    b. Measurement uncertainty is the cause of the measurand problem.
    c. The measurand problem is a problem in all jurisdictions, but not measurement uncertainty.
    d. The uncertainty of a measurement is one way to estimate the size of the measurand problem.

15. How does Text III differ from Text I and Text II?
    a. Only Text III describes a procedure that solves the measurand problem.
    b. Text III describes the direct measurement of a quantity different from that described in Text I and Text II.
    c. Only Text III gives an explicit definition of the measurement function for alcohol concentration.
    d. Text III assumes that indirect measurement is not problematic, whereas Text I and Text II assume that it is.

II. Read the text. For questions 1, 3, and 4, rearrange the seven words in the correct order; then choose the option from a – d that contains the third and fifth words. For questions 2 and 5, rearrange the six words or word groups labeled (i) – (vi); then choose the option from a – d that contains the correct order.

The moderate global warming that has already occurred as a result of human emissions has quadrupled the frequency of certain heat extremes since the Industrial Revolution, scientists reported Monday, and they warned that a failure $_1$(control / could / to / gases / bring / under / greenhouse) eventually lead to a 62-fold increase in such heat blasts. The planetary warming has had a more moderate effect on intense rainstorms, the scientists said, $_2$($_{(i)}$22 percent / $_{(ii)}$the 19th century / $_{(iii)}$by / $_{(iv)}$driving up / $_{(v)}$since /$_{(vi)}$their frequency). Yet such heavy rains could more than double later this century if emissions continue at a high level, they said. "People can argue that we had these kinds of extremes $_3$(on / before / influence / climate / human / well / the) — we had them centuries ago," said Erich M. Fischer, lead author of a study published Monday by the journal *Nature Climate Change*. "And that's correct. But the odds have changed, and we get more of them." The study by Dr. Fischer and his colleague Reto Knutti, of the Swiss Federal Institute of Technology in Zurich, is not $_4$(attribute / in / the / changes / first / to / large-scale) extreme weather to human influence on the climate. But it is among the first to forecast, on a global scale, $_5$($_{(i)}$global warming / $_{(ii)}$change with / $_{(iii)}$might / $_{(iv)}$extremes / $_{(v)}$continued / $_{(vi)}$how those). The question is important because while a gradual increase in average temperatures can have profound ecological consequences, it is weather extremes that have the greatest effect on human society.

[Adapted from Gillis, J. (2015) New study links weather extremes to global warming. *The New York Times*. Retrieved from http://www.nytimes.com/2015/04/28/science/new-study-links-weather-extremes-to-global-warming.html?ref=science on July 16, 2015.]

1. a. *3rd*: control, *5th*: gases
   b. *3rd*: greenhouse, *5th*: under
   c. *3rd*: bring, *5th*: control
   d. *3rd*: control, *5th*: bring

2. a. (iv)–(vi)–(iii)–(i)–(v)–(ii)
   b. (iv)–(i)–(iii)–(ii)–(v)–(vi)
   c. (iv)–(i)–(v)–(vi)–(iii)–(ii)
   d. (vi)–(iv)–(iii)–(i)–(v)–(ii)

3. a. *3rd*: influence, *5th*: the
   b. *3rd*: on, *5th*: human
   c. *3rd*: human, *5th*: on
   d. *3rd*: before, *5th*: on

4. a. *3rd*: attribute, *5th*: in
   b. *3rd*: in, *5th*: attribute
   c. *3rd*: large-scale, *5th*: to
   d. *3rd*: to, *5th*: large-scale

5. a. (vi)–(iv)–(iii)–(ii)–(v)–(i)
   b. (vi)–(v)–(i)–(iii)–(ii)–(iv)
   c. (vi)–(v)–(iv)–(iii)–(i)–(ii)
   d. (vi)–(iii)–(iv)–(v)–(ii)–(i)

III. Answer the questions in Sections A and B.

Section A: Read the passage and choose the best option from a – d for questions 1 – 6.

Energy use in U.S. and European homes is predicted to flatten, for the most part. But it will soar (A) developing and middle-income countries. The main culprit, according to new research from the University of California, Berkley, is air conditioning.

In China, sales of air conditioners (i) have nearly doubled in (I) last five years, with more than 60 million units sold in 2013 alone.

Using (II) data from Mexico, researchers at UC Berkley's Haas School of Business built a model (ii) took into account the relation between climate, income, and air conditioning.

(B) accounting for increases in incomes and expected higher temperatures, they found (iii) the number of homes with air conditionings would rise from 13 percent today to more than 70 percent at the end of the century.

"(C) is mostly good news," Lucas Davis, lead author of the paper and professor at the Hass School of Business, wrote in a blog post. "Air conditioning will bring relief to the more than three billion people who live in the tropics and subtropics."

The problem, however, is that meeting the new demand will require intensive investment in electricity grids in places where it is already badly needed, such as India and southeast Asia.

In the United States, which uses more air conditioning than (III) rest of the world combined, most of the grid is sized to meet the few days a year when coolers are cranking at full blast under sweltering temperatures.

(C) has led to a grid (iv) runs inefficiently most of the year. Some technologies (D) more widely in recent years to help curb demand when it's at its highest, such as remotely controlling air conditioner compressors, but those will have to become commonplace in other (IV) areas of the world if air conditioning is widely adopted.

[Adapted from Tweed, K. (2015) Electricity use could soar as global middle class embraces air conditioning. *IEEE Spectrum*. Retrieved from http://spectrum.ieee.org/energywise/energy/environment/electricity-consumption-could-soar-as-global-middle-class-embraces-acon on May 14, 2015.]

1. Which of the following best fits in blank A?
   a. at b. in c. of d. on

2. In which of the following blanks is it necessary to put the word 'that'?
   a. i and iv b. ii and iii c. ii and iv d. iv only

3. In which of the following blanks is it necessary to put the word 'the'?
   a. I and III b. II and III c. I and IV d. III and IV

4. Which of the following best fits in blank B?
   a. However b. When c. Where d. Whatever

5. Which of the following best fits in both blanks labeled C?
   a. This b. What c. One d. Which

6. Which of the following best fits in blank D?
   a. are adopting b. will be adopting c. being adopted d. have been adopted

Section B: The five paragraphs [A] – [E] given below make up a passage but are not properly ordered. Moreover, the five sentences (1) – (5) in paragraph [A] are not properly ordered. Choose the best option from a – d for questions 7 and 8.

[A] (1) Although data are manipulated in the central processing unit, they are stored in a separate random-access memory.

(2) Known as the von Neumann bottleneck, this renders the computation inefficient.

(3) Nearly all contemporary computational devices are based on a design known as the von Neumann architecture.

(4) Any operation therefore involves the transfer of data between these components.

(5) The Achilles heel of this incredibly successful approach is the separation of computation and memory.

[B] Artificial neural networks are not programmed like conventional computers. Just as humans learn from experience, they acquire their function from data during a training phase. Human-like performance has recently been obtained for several tasks by using huge data sets to train large networks containing hundreds of millions of connections. This research has further fuelled interest in brain-inspired neuromorphic hardware that emulates neuronal computation more directly than conventional hardware in a massively parallel design. But communication between emulated neurons is a crucial factor, and so most of the chip area and power usage of neuromorphic hardware are inefficiently consumed by CMOS circuits that act as artificial synapses.

[C] An alternative model is offered by the architecture of the brain, in which computation and memory are highly intermingled. The 'program' — which includes previously observed data and memories — is stored in the strengths of synaptic connections directly adjacent to the neuronal processing units. Derivatives of this architecture, known as artificial neural networks, have been investigated since the inception of computer science.

[D] Tiny circuit elements called memristors seem to offer an ideal solution to this problem of inefficient consumption. These devices are resistors that have an analog memory conceptually similar to that of biological synapses. Memristor arrays can be fabricated at extremely high density, operate at ultra-low power, and capture key aspects of biological synaptic plasticity (the ability of synaptic connections to strengthen or weaken as a function of the connected neurons' activity). Although neuromorphic chips that approach the connectivity of the human brain are hard to design, research is advancing slowly but steadily.

[E] The human brain is a network of billions of neurons that communicate through some 10^{15} synaptic connections. Our cognitive abilities result from computations performed in this vast network, which is shaped by experience as learning drives changes in the strengths of synaptic coupling. Synthetic neuromorphic circuits use the same massively parallel architecture in complementary metal-oxide-semiconductor (CMOS) technology, which underpins much of the circuitry in conventional computers. But designing neuromorphic chips that approach the connectivity of the human brain remains challenging.

[Adapted from Legenstein, R. (2015) Monoscale connections for brain-like circuits. *Nature*, vol. 521: 37-38.]

7. Rearrange the five sentences in paragraph [A] to make it coherent and choose the option that shows the best sentence order.

a. 5–1–2–4–3 b. 5–4–2–3–1 c. 3–2–4–1–5 d. 3–5–1–4–2

8. Rearrange the five paragraphs [A] – [E] to make the passage coherent and choose the option that shows the best paragraph order.

a. E–A–C–B–D b. E–C–D–A–B c. C–B–A–D–E d. C–D–B–E–A

IV. Read the texts in Sections A and B and answer the questions.

Section A: Choose the best option from a – d for questions 1 – 5.

Statements are sentences, but not all sentences are statements. Statements comprise just those sentences which are true and those which are false. These two properties of statements, truth and falsity, are called truth values. Sentences of questioning, ordering, suggesting, or wishing, such as 'What time is it?' and 'Trains should always be on time', do not have truth values. Thus, they are not counted as statements. Only declarative sentences such as 'Trees are animals' and 'Water is liquid' are statements. Closer examination, however, reveals that all declarative sentences are by no means statements. For example, the sentence 'He is ill' is inherently neither true nor false. Depending on to whom 'he' refers, it may be uttered as true by one person and as false by another.

Most people believe that they are logical, but few have any knowledge of what 'being logical' means. To understand what 'being logical' means, let us distinguish three categories of sentence order.

[1] I'm going to university; The oldest university in Asia opened in 1611; I prefer my classes in the morning.

[2] The grass is green; The sun is shining brightly; The clouds are white and fleecy.

[3] All men are animals; All animals require food and shelter; (Therefore,) all men require food and shelter.

The first set of sentences [1] illustrates the category of *order of association*. A word or phrase in one sentence by association suggests something else, and this, in turn, suggests something further. In this order, our minds merely drift. I think of university; I am reminded of the oldest university in Asia; something peculiar to myself associates this idea with morning classes.

The second set [2] illustrates the category of *order of description*. The sentences describe an existing phenomenon: the weather. The sentences in this order could be completely reshuffled and the same situation would still be described. One arrangement might be more effective than another, but the description would remain essentially the same.

The third set [3] illustrates the category of *order of argument*. If we accept the first two sentences (called *premises*) as true in the argument, then the last sentence (called the *conclusion*) is necessarily true. When the conclusion has this necessary connection to the premises, the argument is said to be *logical*, or in the more precise term of logicians, *valid*.

It is important to note that the validity of the argument does not depend upon the truth of the premises. Argument [4], for example, can be valid even if the premises and the conclusion are false, though the seemingly innocent exchange of "weaklings" and "fools" in the second premise turns the validity of the argument to invalid as in [5].

[4] All people are weaklings; All weaklings are fools; (Therefore,) all people are fools.

[5] All people are weaklings; All fools are weaklings; (Therefore,) all people are fools.

[Adapted from Quine, W.V. (1980) *Elementary Logic*. Cambridge, MA: Harvard University Press: 5; and Huppé, B.F. and Kaminsky, J. (1956) *Logic and Language*. New York: Alfred A. Knopf: 114-120.]

1. Which of the following is true?
   a. All sentences are either true or false.
   b. All statements are arguments.
   c. All valid arguments have premises and a conclusion.
   d. All invalid arguments have a conclusion that is false.

2. Consider two sets of sentences: (A) all sentences that are statements, and (B) all sentences that have truth values. Which of the following is the correct relation between (A) and (B)?
   a. (A) is included in (B), but not vice versa.
   b. The intersection of (A) and (B) equals (B) but not (A).
   c. (A) is equal to (B).
   d. (A) does not intersect (B).

3. Which of the following does the *order of association* share with the *order of description* but not with the *order of argument*?
   a. Any one of the statements is true because of the other statements.
   b. The order of the sentences does not affect the category of the given sentence order.
   c. Only some of the sentences involved are inherently not statements.
   d. none of the above

4. Which of the following – if inserted in place of all people are fools – would turn the validity of argument [5] to valid?
   a. all weaklings are fools
   b. all fools are people
   c. people include all weaklings and all fools
   d. weaklings include all people and all fools

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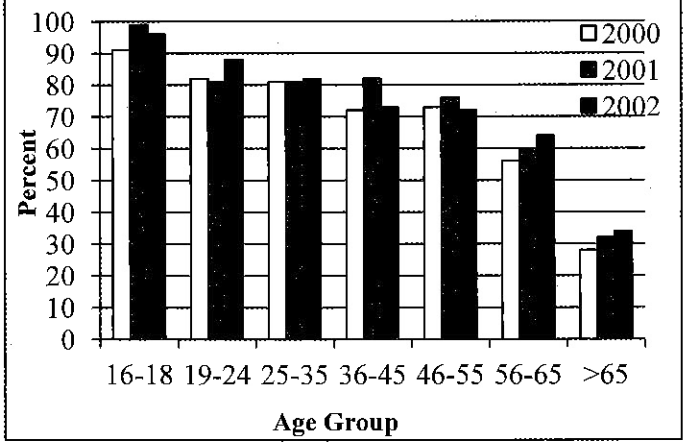
The above expression "Adapted from" for Harvard University Press publication should be replaced by "Source:".

5. Which of the following would logical minds detect as a logical argument?
   a. All men are wealthy. All men are healthy. All men are stealthy.
   b. An aim of a novel is the description of a whole human life or of many human lives. Aspiring novelists should acquire a clear and firm conception of humanity.
   c. John's love of baseball is not restricted to any particular team. He loves all the teams. He loves not only Giants but also Tigers.
   d. I tried to remember what had happened afterwards in the dream. I remembered that I had noticed a swinging lamp of antique fashion. I felt that I had been in some unfamiliar land. But I could not remember the end of the dream.

Section B: For questions 6 – 10, choose the option from a – d that best fits in blanks 6 – 10.

At the same time that we are witnessing explosive developments in technology, the population is aging. People older than 65 represent approximately 13% of the population and by the year 2030 this number will increase to 22%. Moreover, the fastest growing subgroup within the older cohort is the "oldest old" (85+ yrs.) (Federal Interagency Forum on Aging and Related Statistics, 2000). In essence, in order to function independently and interact successfully with the environment, people of all ages need to interact with some form of technology. Recent data for the U.S., shown in Figure 1, indicate that although the use of computers and the Internet within each age group is (6), there is still an age-based digital divide. In 2002, only about (7) of people older than 65 accessed the Internet, compared to approximately (8) of 16-18 year olds. The gap in the Internet use is most apparent between the age groups (9).

Figure 1: Internet Use by Age and Year



Given that technology is (10), people will continually confront the need to learn updated systems or activities at multiple points during their lives. The varieties of technology that are available are increasing at an unprecedented rate. Thus, the topic of aging and technology will continue to be an important issue in the upcoming decades.

[Adapted from Czaja, S.J. (2005) The impact of aging on access to technology. *Accessibility and Computing*—A regular publication of the ACM special interest group on accessible computing. No. 83: 7-11. Retrieved from http://www.sigaccess.org/wp-content/uploads/formidable/sep05_all.pdf on May 15, 2015.]

6. a. decreasing among younger age groups
   b. increasing among older age groups
   c. increasing throughout all age groups
   d. decreasing as age group gets older

7. a. 64%
   b. 60%
   c. 34%
   d. 28%

8. a. 95%
   b. 90%
   c. 85%
   d. 80%

9. a. 16-18 and 19-24
   b. 25-35 and 36-45
   c. 46-55 and 56-65
   d. 56-65 and > 65

10. a. no longer expensive
    b. not static
    c. popular
    d. sufficient

V. Answer the questions in Sections A – C.

Section A: For questions 1 – 5, two definitions are given with one sample sentence each. Think of a word that matches both definitions and also fits the blanks in both sentences. Convert each letter of the word into a number 1 to 4 according to the table below: number 1 represents letters *a* – *g*, 2 represents *h* – *m*, 3 represents *n* – *s*, and 4 represents *t* – *z*. Then choose the matching series of numbers from a – d. For example, if the word you think of is *wise*, for which the first letter *w* is given, the remaining letters would be changed into 2 for *i*, 3 for *s*, and 1 for *e*. Hence, the correct answer would be *w*231.

Number	Letters
1	a, b, c, d, e, f, g
2	h, i, j, k, l, m
3	n, o, p, q, r, s
4	t, u, v, w, x, y, z

1. (i) the effect that someone or something has on another: What is the (*i*) of the Internet on children?
   (ii) the power that someone has to make someone else behave in a particular way: Mary's parents no longer have any real (*i*) over her life.
   a. *i*233133233 b. *i*233341311 c. *i*2111 d. *i*31241311

2. (i) producing a successful result: This medicine is a simple but highly (*e*) treatment of your disease.
   (ii) (of rules) coming into use: The new law becomes (*e*) from the next month.
   a. *e*11212134 b. *e*11114241 c. *e*11334 d. *e*443121

3. (i) the quality of being pleasing to the senses or to the mind: This is a very popular place and is famous for its outstanding natural (*b*).
   (ii) a pleasing feature, an advantage: This project will require little work or money to start up. That's the (*b*) of it.
   a. *b*1111 b. *b*3343 c. *b*11444 d. *b*131124

4. (i) to exchange information or ideas with somebody: We usually (*c*) either by texting or by email.
   (ii) to make your ideas or feelings known to other people so that they understand them: Good candidates are eager to (*c*) their ideas to the interviewer.
   a. *c*3224321141 b. *c*333424 c. *c*323131 d. *c* 21311

5. (i) to play a musical instrument while someone else plays the main tune: At every concert, the virtuoso violinist would play a lovely sonata by Mozart while the pianist would (*a*) him.
   (ii) to go somewhere with someone: Because the neighborhood can become dangerous after dark, the teachers were required to (*a*) their students to the bus stop after the night classes ended.
   a. *a*2142 b. *a*11134 c. *a*113133 d. *a*11323134

Section B: For questions 6 – 10, think of words that fit in the two blanks in sentences (i) – (iii), convert the words into a series of numbers according to the table in Section A, and choose the matching pair of series of numbers from a – d.

6. (i) If you don't (*w*) ( ), someone might steal all your money.
   (ii) You must (*w*) ( ) for the warning signs of depression.
   (iii) Hey, (*w*) ( ). There's a car coming!
   a. (*w*113) (1343) b. (*w*122) (1414) c. (*w*132) (311) d. (*w*1412) (344)

7. (i) The game (*k*)s ( ) at 10:00.
   (ii) Mary would (*k*) ( ) her shoes and lie down on the bed.
   (iii) I keep getting (*k*)ed ( ) the Internet.
   a. (*k*222) (311) b. (*k*3312) (344) c. (*k*233) (1414) d. (*k*212) (311)

8. (i) I'm sure everyone will (*c*) ( ) the kind of problem that seems impossible to solve at first.
   (ii) I hope I will never (*c*) ( ) anything like this in my future.
   (iii) Do you think this message will (*c*) ( ) clearly?
   a. (*c*321) (113333) b. (*c*1412) (43) c. (*c*1334) (344) d. (*c*321) (1343)

9. (i) I'm going to give you a phone number. Can you (*t*) it ( )?
   (ii) After the election concluded, all of the candidates were required to (*t*) ( ) their promotional posters.
   (iii) In the sport of wrestling, if a wrestler can successfully (*t*) their opponent ( ) to the mat, they earn two points.
   a. (*t*121) (3413) b. (*t*433) (311) c. (*t*121) (1343) d. (*t*433) (1343)

10. (i) During the baseball game, the pitcher lasted for seven innings, but at the beginning of the eighth inning he (*t*) his arm ( ) and had to leave the game.
    (ii) After all the neighbors (*t*) ( ) their trash, the dogs came and made a mess of it.
    (iii) We started to brainstorm about the project and everyone (*t*) ( ) their ideas.
    a. (*t*2314) (344) b. (*t*332) (1343) c. (*t*43311) (1343) d. (*t*234124) (344)

Section C: For questions 11 – 15, think of a word that best fits in each blank in the following conversation between a student and a teacher. Convert each word into a series of numbers according to the table in Section A, and choose the matching series of numbers from a – d.

Student: Excuse me. I'm sorry I was (11). I overslept this morning. I don't want to interrupt the class, but may I ask you a (12)?

Teacher: Sure. What do you want to know?

Student: Could you (13) tell me what you have done in class so far?

Teacher: We just reviewed what we did in the last class. So don't (14). You didn't miss much. But why did you oversleep? You (15) have set an alarm clock last night.

Student: I know. In fact, I usually do, but somehow I forgot last night.

11.	a. 3234	b. 2141	c. 1131	d. 3313
12.	a. 11433143	b. 43311243	c. 34134233	d. 21234321
13.	a. 334334	b. 113412	c. 434241	d. 321131
14.	a. 43334	b. 13221	c. 23412	d. 23311
15.	a. 323421	b. 134213	c. 113412	d. 133443

[End of Exam]