1. Please read the following paragraphs, and then select the correct answers for the following questions.

For each question, please write the letter answers (A, B or C) along with the question numbers in your answer sheet. (30%, 5% each question)

"Halo" or some other blockbuster demands dozens of hours of play and thumbs that dance like Lady Gaga to achieve competence. The object of *FarmVille* couldn't be more straightforward: You run a farm with the help of your online friends. It's a light diversion, something you enjoy in installments. The simplicity lends itself well to smartphones, allowing games to fill tiny gaps of downtime throughout the day.

As Facebook's membership exploded in 2008 and 2009, so did its games. Led by *FarmVille*, Zynga grew from 16.9 million monthly active users in September 2008 to 200 million in November 2009. And the surge isn't limited to Zynga. In April 2010, PopCap Games launched a Facebook version called *Bejeweled Blitz* that quickly racked up 3.8 million daily players. PopCap attributes the success to Facebook's use of real identities for members; that appeals to casual gamers and sets Facebook apart from the faceless free-for-all of other online games.

Engineering a Facebook game has its appeal: It can cost as little as $100,000 to develop, which is peanuts compared to the tens or even hundreds of millions that go into a sophisticated console game. But so many game developers rose early to the challenge that Facebook users were quickly overwhelmed, as developers essentially spammed users through news feeds and wall posts. In March 2010, Facebook finally put restrictions on such viral promotions. Users welcomed that reform; but for developers, it made publicizing their new games harder.

For those lucky developers who do manage to get the word out, Facebook success can pose its own headaches. With *FarmVille*, Zynga had to quickly scale up a game from zero users to more than a million in just days, while simultaneously readying the game to add still more millions as word spread. Prior to *FarmVille*, the company ran its games on racks of computer servers in designated data centers. As the game exploded in popularity, however, Zynga engineers had to change their approach.

(These paragraphs were extracted from an article published in the IEEE Spectrum, June 2011.)

(1) The general topic of these paragraphs is

A. the rise of Facebook
B. *FarmVille* is very popular
C. Facebook changed the game world

(2) What does "blockbuster" mean in the first paragraph?

A. popular movies
B. popular songs
C. popular games
(3) From the paragraphs, what was the major difference for PopCap to succeed?
   A. the product was free-for-all
   B. the product was anonymous
   C. users can play with people they know

(4) What does “thumbs that dance like Lady Gaga” mean in the first paragraph?
   A. the user needs to dance as well as Lady Gaga
   B. the user needs to listen to pop music
   C. the user needs to move their fingers fast and efficient

(5) From the paragraphs, how can the manufacturers publicize their products now?
   A. spammed e-mails
   B. viral promotions
   C. none of the above

(6) From the last paragraph, what was the cause of the headaches for “lucky developers”?
   A. their products were popular
   B. they made too much money
   C. they needed new hardware

2. The following paragraph was extracted from IEEE Computer, April 2012. The underlined words are
either misspelled or missing. Please correct these words and put all the responses along with the
question numbers on the answer sheet. (20%, 2% for each question)

(1) Emerge technologies now make it possible to create gestural interfaces for vehicles that not only make
it easier for the driver to carry (2) some tasks (3). also increase safety by significantly reducing
visual demand and the cognitive workload. In designing effective gestural interfaces, good general
starting points are the “eight golden rules of interface design,” and the human (4) communication principles.
Further issues to consider in the specific context of driving are the need to (5) minimizing interruptions
between system control and the driving task, and “blind interaction” mechanisms that reduce the time or
even (6) elimination the need to look at the interface while interacting with it.

Of particular interest for the gestural interaction space is ISO 3958, (7) specifies the area within which
a driver should be able to operate devices (8) a normal driving position. This area is (9) bound by a
rectangle 600 mm to the left of and 400 mm to the right of the center of the steering wheel, 100 mm
below the wheel, and 800 mm above the wheel to the top front of the car seat.

Still needed are solutions to two fundamental problems of gestural interfaces: discoverability, the ability
to reveal all possible menu operations through systematic exploration; and visibility, the ability to convey
the interface’s use and (10) propose.
3. Please translate the English text into Chinese. (25%)
(1). According to Einstein, mass can be converted into energy, and vice versa. (5%)
(2). The transmitter in a fiber-optic communication system is a light source, either a
light-emitting diode (LED) or a laser. Information is transmitted by varying the
intensity of the light emitted by the source with the message content. The
operation of varying the light intensity is also referred to as modulation. (10%)
(3). Suppose that your teacher has asked you and several classmates to set up a
website on the C programming language. Before you even turn on the computer,
your group should come to a consensus on what is to be presented in the site. (10%)

4. Please translate the Chinese text into English. (25%)
(1). Jenny 是個漂亮的女孩，而且她是一個聰明又認真的學生。 (5%)
(2). 一個三角形的三角之和等於兩個直角的和。 (註: 傳角的英文為 right angle) (5%)
(3). 一個向量空間的基底並非唯一，但是其中的向量個數卻是。 (5%)
(4). 基本的電路元件包括電阻、電容、與電感。 (5%)
(5). 因為昨天下雨，所以球賽被取消了。 (5%)