請勿於試題紙上作答；本科目不可使用計算機。

(A) 1~14 單選題，15~16 複選題，每題 5 分。

1. Which of the following data structures is FIFO?
   (A) Array　　(B) Stack　　(C) Queue　　(D) Tree　　(E) Hash table

2. Given the relation below:

X:	A	B	C
	2	5	7
	3	3	6
	4	4	2
	5	2	2

   What values will be retrieved by the following SQL statement?
   select A, B
     from X
     where X.B = X.C

   (A) 2, 5　　(B) 3, 6　　(C) 2, 2　　(D) 5, 2

3. Which one of the following is not a wireless wide area network technology?
   (A) GSM
   (B) Long Term Evolution
   (C) WiFi
   (D) WiMAX

4. Which of the following is not a high-level programming language?
   (A) Assembly
   (B) Python
   (C) C
   (D) Java

5. What is the length of an IPv6 address?
   (A) 32-bit
   (B) 64-bit
   (C) 128-bit
   (D) 256-bit

6. Which of the following is correct memory hierarchy?
   (A) cache – RAM – register – hard drive
   (B) RAM – register – cache – hard drive
   (C) RAM – hard drive – cache – register
   (D) register – cache – RAM – hard drive

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7. The binary search algorithm is in which of the following complexity classes?
   (A) $\Theta(\lg n)$ (B) $\Theta(n)$ (C) $\Theta(n \lg n)$ (D) $\Theta(n^2)$

8. Which of the following formulas can indicate the length of a linear array?
   (UB: upper bound, LB: lower bound)
   (A) UB - LB + 1
   (B) LB + UB
   (C) LB – UB
   (D) LB - UB + 1

9. What is the situation "START=NULL" in linked list called?
   (A) Overflow
   (B) Underflow
   (C) Push
   (D) None of above

10. Consider the following loop code:
    ```
    int[] number = new int[10];
    for (int i = 0; i <= number.length; i++)
    {
        number[i] = (int)(Math.random() * 10);
    }
    ```
    Which of the following statements is true?
    (A) The loop will execute 10 times, filling up the array with random numbers.
    (B) The loop will execute 10 times, filling up the array with zeros.
    (C) The code has a runtime error indicating that the array is out of bound.
    (D) All of the above statements are wrong.

11. A machine needs a minimum of 100 seconds to sort 1000 names by quick sort.
    What is the minimum time needed to sort 100 names by the same method approximately?
    (A) 50.2 seconds
    (B) 72.7 seconds
    (C) 11.2 seconds
    (D) 6.7 seconds

12. Which of the following protocols works at the Internet layer and provides a connection service between hosts?
    (A) IP
    (B) TCP
    (C) UDP
    (D) ARP

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13. What is the main difference between DDCMP (Digital Data Communications Message Protocol) and SDLC (Synchronous Data Link Control)?
    (A) DDCMP does not need special hardware to final the beginning of a message
    (B) DDCMP has a message header
    (C) SDLC has a IP address
    (D) SDLC does not use CPC

14. How many values does the following loop print? Note that a Java "int" is a 32-bit two's complement integer.
    for (int i = 1; i >= 0; i = i + i) {
        StdOut.println(i);
    }
    (A) 31
    (B) 32
    (C) $2^{30} - 1$
    (D) $2^{31} - 1$
    (E) $2^{32} - 1$

15. (複選) Which of the following statements are true?
    (A) A greedy algorithm can be used to solve the 0-1 knapsack optimization problem.
    (B) Dynamic programming can be used to solve optimization problems where the size of the space of possible solutions is exponentially large.
    (C) Dynamic programming can be used to find an approximate solution to an optimization problem, but cannot be used to find a solution that is guaranteed to be optimal.
    (D) When run on the same inputs, an exponential algorithm will always take longer than a polynomial algorithm.
    (E) Typically, the use of functions in a program reduces the total number of lines of code.

16. (複選) Which of the following statements are true?
    (A) In Python, an instance of a class is an object, but a class itself is not.
    (B) In C, the maximum value that an integer constant can have is 32767.
    (C) Any program that can be written using only function definitions and calls, the basic arithmetic operators, assignment, and conditionals will run in constant time.
    (D) The value of 'math.sqrt(2.0)*math.sqrt(2.0) == 2.0' is True.
    (E) One should always avoid iteration when a recursive solution is possible.

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(B) 問答題

1. (10%) The Fibonacci series begins with 0 and 1 and each succeeding term is the sum of the two proceeding terms: 0,1,1,2,3,5,8,...
   Write a **recursive** function int fibonacci(n) in C to compute the nth Fibonacci number.

2. (5%) Explain the difference between call by value and call by reference.

3. (5%) Write a procedure that uses a one-dimensional array A to store all elements of a two-dimensional array B.

全部計算題，共 100 分。不可於試題紙上作答。
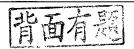
1. （每小題 6 分）A software company is launching a marketing campaign for its latest developed products. To do so, the company uses web banners for advertising its products. Six major online software retailers are considered to locate the banners, which includes ABC coders, The Code House, All My SQL, 123 Developer, C Sharper, and The Software Stuff. The banners will provide a direct link to the company's main web page. After the campaign is over, the company gathers valuable information to examine the campaign effectiveness as shown in Figure 1 on the last page. Note that Banner Impression (also called Banner Hit) measures the number of times the banner is displayed; Click-Through-Rate is a ratio of the number of times the banner was clicked on by the viewer to the number of impressions; and Cost-Per-Click is the price you pay for one click on your banner.

   (1) Which online software retailer is the most effective for this particular campaign? Why? How many impressions are from this online software retailer?

   (2) Use the information of the pie chart and bar chart to calculate the total number of click-throughs to the company's main page. Does this number match the information provided? What factor do you think causes the deviation, if any?

   (3) What is the cost per 1000 impressions for the ABC Coders retailer?

   (4) How many visits are there to the company's main page? How many visitors download the software?

   (5) Do you think any part of Figure 1 distort the truth and should be avoided?

2. （每小題 6 分）In their controversial book *The Bell Curve*, Professors Herrnstein and Murray explored "intelligence and class structure in American life." One of the many controversies sparked by the book is the authors' tenet that level of intelligence is a cause of a wide range of intractable social problems, including constrained economic mobility (the ability of an individual or family to improve their economic status). The measure of intelligence chosen by the authors is the well-known intelligent quotient (IQ). Psychologists traditionally treat IQ as a random variable having a normal distribution with mean $\mu = 100$ and standard deviation $\sigma = 15$.

   In their book, Herrnstein and Murray refer to five cognitive classes of people defined by percentiles of the normal distribution. Class I consists of those with IQs above the 95th percentile; Class II consists of those with IQs between the 75th and 95th percentiles; Class III consists of those with IQs between the 25th and 75th percentiles; Class VI consists of those with IQs between the 5th and 25th percentiles; and Class V consists of those with IQs below the 5th percentile.

   (1) Assume that the distribution of IQ is represented by the normal curve. Which cognitive class includes the most proportion of people? What *z*-score range is indicated by each cognitive class?

   (2) Assuming the distribution of IQ is represented by the normal curve, what IQ score range is indicated by each cognitive class?

   (3) Researchers have found that IQ distribution is decidedly nonnormal. How would the IQ score ranges in the five cognitive classes differ for an IQ distribution that has the same mean but is skewed right?

   (4) If the IQ distribution is nonnormal, what shape would you expect the sampling distribution of the sample mean to have if we choose 100 people randomly and measure their IQ average? Why?

   (5) Assume that you choose 100 people randomly in Taiwan. Find the probably that the sample mean of IQ will be 103 or more. State any assumptions you make.

   (6) In one study, the researchers found that a sample of 100 people in Taiwan had a mean IQ of 103. Considering your answer in (5), what can you infer about the IQ distribution for people in Taiwan?

3. (第 5 小題 10 分，其他每小題 6 分) Is the number of games won by a major league baseball team in a season related to the team's batting average? To address this issue, a researcher examined data from the *Baseball Almanac* (2007) on the number of games won and the batting averages for the 14 teams in the American League for the 2006 Major League Baseball season. The data are shown as follows:

Team	New York	Toronto	Baltimore	Boston	Tampa Bay	Cleveland	Detroit
Games Won	97	87	70	86	61	78	95
Batting average	.285	.284	.277	.269	.255	.280	.274
Team	Chicago	Kansas City	Min-nesota	Los Angeles	Texas	Seattle	Oakland
Games Won	90	62	96	89	80	78	93
Batting average	.280	.271	.287	.274	.278	.272	.260

(1) A partial output of the simple linear regression model from a statistical software is given as follows. Fill in the blanks.

Analysis of Variance					
Source	DF	SS	MS	F value	P value
Model		405.263			0.0936
Error				—	—
Total	13	1872.000	—	—	—

Parameter Estimates					
variable	DF	Estimates	Standard Error	t value	P value
Intercept	1	-85.684	92.686	-0.9245	0.3735
BATTING	1	614.035	337.217	1.8209	0.0936

(2) Conduct a test (at $\alpha = 0.05$) to determine whether the mean number of games won by a major league baseball team is positively linearly related to the team's batting averages.

(3) Compute the coefficient of determination, r^2, and interpret its meaning.

(4) Construct a 95% confidence interval for the number of games won by a team with a .285 batting average.

(5) Perform a residual analysis on the data and determine the adequacy of the fit of the model.

| Summary | Marketing Costs | Web Banners | Website |

Use the drop list controls on the right to select the time period as well as the banner.　Period: [YTD]　Banner: [All Banners]

Banner Campaign Hits (All Banners)

ABC Coders
The Code House
All My SQL
123 Developer
C Sharper
The Software Stuff

Banner Statistics

Impressions 205,605,792

Main Page Visits 2,246,030

Product Page Visits 1,250,683

Downloads 1,022,316

Click-Throughs per Impression (All Banners)

123 Developer 0.89%
ABC Coders 1.09%
All My SQL 0.66%
C Sharper 0.75%
The Code House 2.05%
The Software Stuff 1.13%

0.0%　0.5%　1.0%　1.5%　2.0%　2.5%

Visits through Banner　Cost per Click　Visitors who Download

Figure 1 Visualized Web Banner Campaign Information

1. (15%) For each of the following expressions, indicate its value. Be sure to list a constant of appropriate type (e.g., 7.0 rather than 7 for a double).
(A) 3 * (5 - 2) - 3 - 2 * 2
(B) 4 * 7 % 8 + 132 % 10 + 3 % 4
(C) 27 / 5 / 2 + 3.4 * 2 - 1.1 * 2
(D) 19 / 2 / 2.0 + 2.5 * 6 / 2 + 0.5 * 4
(E) 25 / 2.0 + 27 / 5

2. (15%) Consider the following method.

```
public static void Mystery(int a, int b) {
    if (a < b) {
        a++;
    }
    if (a < b) {
        a++;
    } else {
        b++;
    }
    if (a >= b) {
        b = b - 5;
    }
    System.out.println(a + b);
}
```

For each call below, indicate what output is produced.
(A) Mystery(1, 8)
(B) Mystery(3, 5)
(C) Mystery(4, 5)
(D) Mystery(8, 6)
(E) Mystery(6, 6)

3. (10%) Given a list of input data: 22, 15, 5, 9, 18, 43, 12, and 38.
   (A) Construct a heap so that it can output the data in descending order. Make sure that you sure the construction step by step.
   (B) Show the heap after the first deletion.

4. (10%) Given a binary tree T in which each internal node of T stores a single character. If its inorder traversal yields GOODLUCK, and preorder traversal yields OGOULDKC.
   (A) Draw the binary tree.
   (B) What is the preorder traversal of T?

5. (20%) Refer to Question 2. Suppose that the input variable 'a' is uniformly distributed in [0, 9], and 'b' is uniformly distributed in [5, 14].
   (A) What is the probability for a<b? (10%)
   (B) Suppose that we have the following execution times for various operators . The execution times for the other operators can be ignored. (10%)
   ++: 5ms
   −: 10ms
   +: 10ms
   println: 100ms
   What is the average computation time for Mystery(a, b)?

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6. (15%) Compute the following recursion functions:
   (A) $T(n) = T(n-2)+T(2)+n$, where $n>2$, and $T(2)=T(1)=1$.
   (B) $T(n) = T(n/2)+1$, where n is even and $n\geq 2$, $T(1)=1$.
   (C) $T(n) = 2T(n/2)+1$, where n is even and $n\geq 2$, $T(1)=1$.

7. (15%) Predicate calculus is very powerful in representing statements by using a small number of constructs, such as forall ($\forall$), exist($\exists$), and($\wedge$), or($\vee$), not($\neg$), and imply($\rightarrow$). For example, "Any normal bird can fly" can be denoted as:

   $\forall x$ [(Bird(x)$\wedge$Normal(x)) $\rightarrow$ CanFly(x)].

   "Every person must have a father" can be represented as:

   $\forall x$ [Person(x) $\rightarrow \exists y$ (Person(y) $\wedge$ Father(y, x))].

   Please use predicate calculus to denote the following sentences:
   (A) Every person must have a father and a mother (7%)
   (B) An ostrich is an abnormal bird (8%)

1. 1.1 在電子商務領域，何謂 Online to Offline (O2O)？請舉一例說明其應用。(5 分)
   1.2 請說明 Web 2.0 之概念為何？請提供兩個 Web 2.0 之應用案例。(5 分)
   1.3 何謂雲端運算(Cloud Computing)？雲端運算服務模式有哪些？(5 分)
   1.4 虛擬整合 (Virtual Integration)模式被視為是 DELL 成功的關鍵因素之一，請說明其虛擬整合之概念為何？(5 分)

2. 請依據 Computer Integrated Manufacturing (CIM)的階層概念，說明供應鏈管理(SCM)與企業資源規劃(ERP)以及生產執行系統(MES)彼此間的互動關係(例如資訊傳遞)。(15 分)

3. 第三方支付是電子化付款方式之一，請舉一第三方支付平台為例簡述其應用。(15 分)

4. 資訊科技(IT)投資成本與效益的衡量問題，一直困擾著資訊管理人員，請問 IT 投資的成本衡量與效益衡量有哪些主要的困難與問題?面對這些問題你認為應該用哪些方法來解決與改善。(25 分)

5. 在資訊系統引進成敗的關鍵議題上，有所謂的「互補資產理論」(Complementary Assets Theory)，請問何謂互補資產?企業 IT/IS 的引進為何需要互補資產?你認為 IT/IS 最主要的互補資產有哪些?(25 分)

This exam consists of two parts: (1) a Grammar, Vocabulary, and Punctuation part, and (2) a Reading Comprehension part. The total number of questions is 50 (2 points per correct answer).

- For the Grammar, Vocabulary, and Punctuation part, choose the word or phrase that fits best in the blank of the given sentence.
- For the Reading Comprehension part, choose the answer that comes closest to the meaning of the text.

1. Grammar, Vocabulary, and Punctuation

1. ____ a university degree once meant automatic entry into the middle class, it now no longer does.
(a) Since　　　(b) When　　　(c) Whereas　　　(d) In the past

2. Back home after a night of gambling, Frank ____ Tanja's silence as a sign of disapproval.
(a) listened to　　(b) heard　　(c) convinced　　(d) construed

3. Now that he is studying electrical engineering, his knowledge ____ computers is increasing fast.
(a) of　　　(b) off　　　(c) toward　　　(d) in

4. In the age of online content, ____ we still read newspapers and magazines 5 years from now?
(a) won't　　(b) should　　(c) are　　　(d) will

5. My tomatoes were coming along fine until they were ____ with parasites.
(a) deluged　　(b) devoured　　(c) involved　　(d) infested

6. Paris ____ be the the most beautiful city in the world, but it definitely has some of the most glorious boulevards in all of Europe.
(a) may　　(b) may or may not (c) could　　(d) could not

7. –"I don't feel like going to school today."
　–"Me ____."
(a) also　　(b) same here　　(c) neither　　　(d) either

8. Children's educations can lead to ____.
(a) parent's money's worries　　　(b) parents' money worries
(c) parent's money worries　　　(d) parents' money's worries

9. In large parts of Africa, malaria still hasn't been ____.
(a) eradicated　　(b) erased　　(c) eroded　　　(d) exacerbated

10. People ____ tend to like running; elderly ones are content to walk.
(a) , who are young,　　(b) who are young　(c) which are young　　(d) if young

11. That man starts to talk in the middle of the street to ____ is willing to listen to his stories.
(a) whomever　　(b) whoever　　(c) whichever　　(d) whatever

12. The disease, avian flu, affected a large ____ of chickens in Hong Kong.
(a) amount　　(b) group　　(c) part　　　(d) number

13. Carl ____ launched his own start-up company, but that was when he was 10 years younger.
(a) ever　　(b) lately　　(c) at last　　(d) once

14. A typical group of forty Mainland tourists ____ Taiwanese tour guides plenty of work.
(a) gives　　(b) cause　　(c) implies　　(d) causing

15. After an hour of vigorous exercising, ____.
(a) Carla's clothes were soaking wet　　(b) Carla's face was contracted with pain
(c) Carla feared she had pulled a muscle　　(d) Carla's fear was that she had injured her legs

16. If you live in a city with good public transport, cars are ____.
(a) expedient　　　(b) expendable(c) expansive　　　(d) expiable

17. I saw Chantal and John in the library last night, both of them ____ hysterically.
(a) laughed　　　(b) laugh　　(c) did laugh　　　(d) laughing

18. In spite of ____, Michael felt a pang of envy after Roger's sudden promotion.
(a) their friends　　(b) they are friends (c) their being friends　　(d) mutual friends

19. After my house burned down, the insurance company thoroughly investigated my claim: they ____ suspected fraud.
(a) ought to have　　(b) should not have (c) could have　　　(d) must have

20. Peter's awkward giggling only Jacintha knew ____.
(a) the reason of　　(b) why　　(c) the cause　　　(d) as well

21. Debbie's cat is so thin because it it such a ____ eater.
(a) voracious　　　(b) finicky　　(c) feline　　　(d) finite

22. If you ____ more discipline as a youngster, you could have been a professor like your sister!
(a) had　　　　(b) would have　　(c) had had　　　(d) applied

23. The smell of the new carpet made Rocky feel ____.
(a) nauseated　　(b) nausea　　(c) noxious　　　(d) nauseating

24. Never ____ abroad, Jeffrey was a bit anxious now that he would be visiting Egypt with his family.
(a) going　　(b) gone　　(c) traveled　　　(d) having been

25. ____ Japan, where consumers prefer local brands, Chinese consumers favor foreign brands.
(a) Other than　　(b) Despite　　(c) Unlike　　　(d) Whereas

26. ____ in Taiwan, you surely want to visit one of the hot springs on the East Coast.
(a) When traveling (b) On his trip　　(c) Everywhere　　(d) Only

27. Criminals often wear motorcycle helmets to avoid ____ by security cameras.
(a) detection　　(b) disguise　　(c) detention　　　(d) demarcation

28. How long has it been ____ you had a piece of real, home-made apple pie?
(a) that　　　(b) without　　(c) when　　(d) since

29. Astronomers deal in very ____ theories about the nature of the universe.
(a) abstemious　　(b) abstruse　　(c) abysmal　　(d) abusive

30. Although usually much more expensive, direct flights from Taipei to US cities are ____ preferable.
(a) inviolably　　(b) innumerably　　(c) definitely　　(d) indefinitely

31. I fear for Justin Bieber ____ has clearly unhinged the poor guy! 背面有題

(a) , fame　　　　　(b) when fame　　　(c) : fame　　　　　　(d) ; Fame

32. She may be a city girl, but I know nobody who loves ____ as much as she does!
(a) nature　　　　(b) natural world　　(c) world of nature　　(d) the nature

33. He sometimes cannot sleep at night because he ____ global warming so very much.
(a) concerns about　(b) concerns　　　(c) concerns himself about　(d) is concerned about

34. Forty years ago relatively few Taiwanese ____ higher education.
(a) accepted　　　　(b) received　　　(c) studied　　　　(d) applied

35. I was happy to read that, compared to ten years ago, road traffic now claims ____ fatalities.
(a) quite a few　　(b) much less　　(c) many fewer　　(d) very little

36. His wife's increasingly ____ behavior distressed the noted psychiatrist.
(a) erroneous　　　(b) erratic　　(c) erosive　　　　(d) erudite

37. The 2008 financial crisis ____ Josiah fear for the safety of his retirement fund.
(a) did　　　　　　(b) scared　　(c) caused　　　　(d) increased

38. Seeing his old neighborhood being torn down, the old man grew ____.
(a) witless　　　　(b) wistful　　　(c) wispy　　　(d) witty

39. His son's current problems with the law have to do with ____ years ago.
(a) him being overprotective　　　　(b) his being overprotective
(c) his having been overprotective　　(d) that he was overprotective

40. Don't mind him: he is just being ____.
(a) fastidious　　　(b) facetious　　　(c) fallacious　　(d) farinaceous

2. Reading Comprehension

Organized crime is globalizing and diversifying. Mono-ethnic, hierarchical mafias are being replaced by multi-ethnic networks that operate across borders and commit many types of offense. In an ongoing investigation into rhino-horn trafficking, the U.S. Fish and Wildlife Service arrested Irish travelers using indigent Texans to procure material for Chinese and Vietnamese buyers. Europol, the European Union's law-enforcement agency, estimates that just a quarter of Europe's roughly 3,600 organized crime groups have a main nationality, and that some operate in dozens of countries. A third are involved in more than one criminal enterprise, with half of those linked to drug-trafficking.

And though traditional trafficking in drugs, guns, and people is still lucrative, gangs are increasingly moving into lower-risk, higher-reward areas—not just wildlife, but fraud and illegal waste-disposal. The value of cross-border trade in counterfeit goods could be as much as $250 billion a year.

(Adapted from *The Economist*, Jan 18-24th 2014: page 56)

41. Organized crime is becoming
(a) more like a hierarchical mafia that operates across borders
(b) a more diverse mix of mono-ethnic and multi-ethnic networks
(c) more likely to operate across borders and to consist of criminals from diverse ethnic backgrounds
(d) more likely to be run by Irish travelers and Texan gangs who sell to Chinese and Vietnamese buyers

42. Rhino-horn trafficking is an example of

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(a) the U.S. Fish and Wildlife Service enlisting the help of indigent Texans
(b) an offense committed by Irish travelers to procure Chinese and Vietnamese buyers
(c) a criminal operation that crosses the borders of China and Vietnam
(d) the globalizing and diversifying nature of organized crime

43. The Texans in this article are called "indigent" to indicate that they are
(a) poor
(b) angry and upset with how the Irish travelers treat them
(c) aboriginal Texans
(d) skillful in stealing rhino-horn

44. Europol must be
(a) a multi-ethnic group of European lawyers
(b) one of the roughly 3,600 European crime groups that have one main nationality
(c) one of the roughly 3,600 European crime groups that do not have one main nationality
(d) a Europe-wide police force

45. Fraud and illegal waste-disposal are forms of crime that
(a) unlike rhino-trafficking, are lower-risk, higher-reward
(b) unlike trafficking in drugs, guns, and people, are lower-risk, higher-reward
(c) are as lucrative but also as risky as trafficking in drugs, guns, and people
(d) less risky but also less rewarding than trafficking in wildlife

Across developed economies, finding work has become tougher for the young. Almost a quarter of those in Europe were jobless in 2013. But behind that figure lies a paradox: only two-fifths of employers were confident of finding enough qualified graduates to fill entry-level positions. That reflects a mismatch between what education systems provide and what employers need. Especially in times of recession, firms insist on hiring staff who can quickly get up to speed. The real shortage is of the right skills, rather than of jobs. Yet, universities and colleges are startlingly complacent. Most think they prepare their charges well for work, but most employers disagree. That means an army of young hopefuls, eager for a job but ill-equipped to do one.　　(Adapted from *The Economist*, Jan 18-24th 2014: page 57)

46. This article is most critical of
(a) employers　　　　　　　(b) universities and colleges
(c) governments　　　　　　(d) job-seekers

47. The paradox of which this article speaks is that
(a) there are enough qualified graduates, but employers do not hire them
(b) employers could hire, but do not have the confidence to do so
(c) there are job openings, but employers cannot find enough qualified job-seekers
(d) there are job openings, but in times of recession employers do not have the confidence to hire

48. "staff who can quickly get up to speed" means employees who can
(a) quickly acquire the skills needed for the job they are asked to do
(b) fulfill the job they are asked to do in a speedy manner
(c) quickly be fired, if necessary
(d) quickly be promoted to positions of greater responsibility

49. that universities are "startlingly complacent" means that they
(a) are unaware that they do not teach the skills that lead to jobs
(b) are unable to teach the skills that lead to jobs

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(c) are only now starting to teach the skills that lead to jobs
(d) are wrongly confident that they teach the skills that lead to jobs

50. In the continuation of this article, it will probably be argued that
(a) young people need to prepare for a likely future without work
(b) employers should become used to hiring ill-equipped staff
(c) employers should have a bigger say in how universities and college prepare their charges
(d) young people should consider joining the army

End of the English Entrance Examination