This exam consists of 50 multiple-choice questions; 2 points for each correct answer.

A. Choose the best word(s) to complete each sentence

1. Poor Jenny: she ___ unlucky in love two times already this year!
   a. is  
   b. has been  
   c. had been  
   d. was to be

2. Jean-Jacques was a ___ child: he read novels from the age of five!
   a. precocious  
   b. precious  
   c. predominant  
   d. prevaricating

3. She wondered how the country’s president ___ still have such black hair.
   a. can  
   b. would  
   c. could  
   d. will

4. The man had old, smelly shoes and ___ clothes.
   a. shabby  
   b. expensive  
   c. identical  
   d. fashionable

5. In a(n) ___ world, everyone would have enough to eat.
   a. real  
   b. best  
   c. ordered  
   d. ideal

6. Accept Joachim’s marriage proposal ___ you will be sorry for the rest of your life!
   a. and  
   b. but  
   c. however  
   d. although

7. My veterinarian told me that my dog is not just fat—he is ___.
   a. lean  
   b. obese  
   c. anorexic  
   d. underfed

8. You’re wearing that to the dance? But overalls are so ___!
   a. big  
   b. popular  
   c. out of date  
   d. vintage

9. Mark would not ___ a word about what happened last weekend.
   a. utter  
   b. express  
   c. show  
   d. divulge

10. I really haven’t spoken with Shu-ching since we had that ___.
    a. impact  
    b. run-in  
    c. falling out  
    d. going out

11. Neither Victoria nor Camilla is giving ___ opinion about this matter.
    a. his  
    b. her  
    c. their  
    d. much

12. It was ___ that she felt very tired.
    a. late  
    b. obvious  
    c. difficult  
    d. finally

13. There are lots of vitamins in dark green vegetables ___ spinach and broccoli.
    a. for examples  
    b. such as  
    c. like as  
    d. as

14. Don’t spill wine on your blouse: it ___ badly.
    a. stains  
    b. feels  
    c. burns  
    d. grows

15. I’d really rather that you didn’t ___ anything about my hairdo this time.
    a. alter  
    b. cut  
    c. color  
    d. perm

16. I knew ___ than to disturb my father while he was watching the news on TV.
    a. best  
    b. better  
    c. well  
    d. then
17. The cockroach --- under the refrigerator when I tried to kill it.
a. hided  b. was hided  c. did hid  d. hid

18. Emma looks --- with her Great Gatsby dress!
a. delighted  b. delighting  c. luminous  d. lighter

19. What went through his mind when he pointed his gun at her I cannot even ---.
a. conceive of  b. conceive  c. conceptualize  d. condone

20. Is this novel based on --- real story?
a. the  b. an  c. its  d. a

B. Choose the sentence that is grammatically correct

21. a. Sharyl was the most intelligentest person I have ever know.
   b. Sharyl is the most intelligentest person I ever knew.
   c. Sharyl was the most intelligent person I have ever known.

22. a. However running 10 miles is difficult, it can also be rewarding.
   b. Although running 10 miles is difficult, it can also be rewarding.
   c. Similarly running 10 miles is difficult, it can also be rewarding.

23. a. Whereas we wanted to have dinner outside; however, it was raining.
   b. We wanted to have dinner outside; conversely, it was raining.
   c. We wanted to have dinner outside; however, it was raining.

24. a. My dog is as fast a runner than your dog.
   b. My dog is faster a runner as your dog.
   c. My dog is as fast a runner as your dog.

25. a. Not only did Mina want to learn how to go rock climbing but also swim.
   b. Not only did Mina want to learn how to go rock climbing but also how to swim.
   c. Not only did Mina want to learn how to go rock climbing but also to swim.

26. a. After two weeks of travel, Isabel felt tired, weak, and sore.
   b. After two weeks of travel, Isabel felt tired, weak, and she has a sore shoulder.
   c. After two weeks of travel, Isabel felt tired, weakly, and she has a sore shoulder.

27. a. She frequently stopped at the bakery on her way home from work.
   b. She frequent stopped at the bakery on her way home from work.
   c. She frequently to stop at the bakery on her way home from work.

28. a. But Karl, a shirt without tie is not proper wearing for an official dinner like that!
   b. But Karl, a shirt without tie is not properly wearing for an official dinner like that!
   c. But Karl, a shirt without tie is not proper dress for an official dinner like that!

29. a. If I were king of this island, I would banish all scooters!
   b. If I was king of this island, I banished all scooters!
   c. Had I been king of this island, I banish all scooters!
30. a. I would understand more if only the teacher would speak more louder.
b. I would understand more if only the teacher spoke more loudly.
c. I would understand more if only the teacher spoke louder.

31. a. Anna let her dog keep walking for hours on end.
b. Anna kept her dog walking for hours on end.
c. Anna let her dog walking for hours on end.

32. a. There are impolite people everywhere, not just in China.
b. There are impolite people in everywhere, not just in China.
c. There are impolite people everywhere, but not just in China.

33. a. What he dreaded, more than drowning, was being eaten by sharks.
b. What he dreaded, more than to drown, was being eaten by the shark.
c. What he dreaded, more than being drowned, was being eaten by a shark.

34. a. Fast runners, a dog usually catches a hare.
b. Fast runners, hares usually outrun dogs.
c. Fast runners, are both dogs and hares.

35. a. The thief admitted his guilty so that his jail term was reduced.
b. The thief admitted he was guilty but did not have his jail term reduced.
c. The thief admitted his being guilty but did not reduced his jail term.

C. Choose the word or phrase most closely related to the target word or phrase

36. tend to cost
   a. always cost
   b. never cost
   c. usually cost

37. seasoned
   a. salty
   b. experienced
   c. related

38. petty
   a. not important
   b. not expensive
   c. not friendly

39. to rank
   a. to stand
   b. to put in order
   c. to lie down

40. properly
   a. correctly
   b. slowly
   c. quickly

41. to clarify
   a. to clean
   b. to rinse
   c. to make clear

42. practically dead
   a. almost dead
   b. completely dead
   c. used to be dead

43. no wonder
   a. not surprising
   b. very surprising
   c. very boring
44. to skip lunch
   a. to eat lunch very quickly  b. to make lunch  c. not to eat lunch

45. fairly expensive
   a. reasonably priced  b. above-average in price  c. cheap.

D. Choose the answer that best reflects the meaning of the text

Over the last decade the dissenting voices around business schools have grown. Business schools – despite their manifest success – have been forced onto the back foot. They are not alone. There is a broader challenge to the purpose and responsibility of business. Against this backdrop it is imperative that business schools have a clearly articulated statement of their purpose, one that compellingly makes the case for business schools and positions them productively alongside other professional schools. To reiterate: the purpose of business schools is to create academic, personal and social value. The challenge for each and every business school is to clearly articulate how it creates value along these three dimensions. Each school must know and communicate how it positions itself in terms of value creation. What does it do to create value? How does it do so and how is that distinctive? What is its position in each of the three dimensions of value creation?


46. Over the last decade,
   a. the purpose of business schools has been questioned more and more
   b. business schools have come to be closer allied with businesses
   c. business schools have become less progressive
   d. business schools have been considered irresponsible

47. Business schools,
   a. unlike businesses, are nowadays asked to formulate their purpose and responsibility
   b. like businesses, are nowadays asked to formulate their purpose and responsibility
   c. despite their success, are questioned by businesses as to their purpose and responsibility
   d. despite their success, have been forced to join productively with businesses and professional schools

48. A “clearly articulated statement of their purpose” means that business schools
   a. must use clearer language in explaining their purpose
   b. must be as productive as other professional schools
   c. must explain their importance and value as professional schools
   d. must reiterate what their purpose is

49. The three dimensions of value creation of which this paragraph speaks are
   a. business schools, professional schools, communication schools
   b. creation, distinction, challenge
   c. purpose, responsibility, productivity
   d. academic, personal, social

50. Business schools should be
   a. dissenting voices
   b. articulated statements
   c. value creators
   d. challenging environments
A. Multiple Choice （單選題） 50%

1. A CPU's word size is important because it determines which ______ the CPU can use.
   A) application software    B) input devices
   C) disk storage           D) operating system

2. Which of the following types of memory has L1, L2, and L3 levels of storage?
   A) RAM     B) ROM    C) cache    D) flash

3. Which is not one of the three major categories of cloud computing services?
   A) Infrastructure-as-a-Service (IaaS)    B) Platform-as-a-Service (PaaS)
   C) Communication-as-a-Service (CaaS)     D) Software-as-a-Service (SaaS)

4. All of the following are involved in loading the operating system EXCEPT:
   A) loading the kernel into the computer memory.
   B) adjusting the setup program in the BIOS.
   C) searching for the operating system.
   D) loading system configuration information.

5. Virtual memory is an enhanced way to utilize the main memory by:
   A) using a part of ROM as an extension of RAM to conserve the main memory.
   B) using a hard disk swap file when memory is full.
   C) dividing data and instructions into multitasking units.
   D) creating pages of variable size to use when the swap file is full.

6. The TCP layer of communication design:
   A) handles the address part of each packet so that it gets to the right destination on the Internet.
   B) manages the assembling of a message or file into smaller packets that are transmitted over the Internet.
   C) ensures the security of information being transmitted from unauthorized parties.
   D) None of the above.

7. A complete URL has four parts: protocol, ______, path, and resource name.
   A) network id    B) IP address    C) domain name    D) server name

8. Which of the following network devices has the capability to determine the best path to transmit data and determine alternative pathways?
   A) Router    B) Switch    C) Pathfinder    D) Director

9. A protocol suite specifies how the network functions, or its:
   A) network suite.    B) network architecture.
   C) network package.    D) network configuration.

10. The term network topology refers to the:
    A) type of network operating system used on the file server.
B) type of Internet connections available to users of the network.
C) physical layout of a local area network.
D) contention-management strategy used to resolve collisions.

11. The bandwidth of a digital signal is measured in:
   A) hertz (Hz).
   B) characters per second (cps).
   C) cycles per second (cps).
   D) bits per second (bps).

12. A bubble sort of 1000 elements requires a maximum of ________ passes.
   A) 1001    B) 1000    C) 999    D) 998

13. Which of the following is NOT a feature of the Java programming language?
   A) Java includes miniprograms called applets that are made available through a
      network or over the Internet.
   B) A program written in Java can be executed on any type of computer that has
      installed the Java Virtual Machine software.
   C) Java programs execute much faster than those written in languages such as C
      or C++.
   D) The Java language enables programmers to create programs that "write once,
      run everywhere."

14. Although virtual memory enables users to work with more memory than the
    amount of RAM installed on the computer, ________ slows the computer down.
    A) memory scrubbing    B) segmentation    C) the operating system    D) paging

15. Recursion is memory-intensive because
    A) it must occur numerous times before it terminates
    B) previous function calls are still open when the function calls itself and the
       arguments of these previous calls still occupy space on the call stack
    C) many copies of the function code are created
    D) it requires large data values

16. All of the following are good database characteristics EXCEPT:
    A) data integrity.    B) data independence.    C) data duplicity.    D) data security.

17. What is the freeway of parallel connections that allows components within and connected
    to the system unit to communicate?
    A) CPU    B) Port    C) Connector    D) Bus

18. A common reason for using hard disk partitions in a computer system is that:
    A) a different partition can be used for each application software product.
    B) partitioned hard disks have a faster access time.
    C) hard disks over 1 GB in capacity must be partitioned due to their size.
    D) partitions enable the computer to boot different operating systems.

19. An entity-relationship diagram (ERD) is used to:
    A) display the current status of each phase of the SDLC.
20. What value does function mystery return when called with a value of 4?
   int mystery ( int number ) {
     if ( number <= 1 )
       return 1;
     else
       return number * mystery( number - 1 );
   }
   A) 1  B) 24  C) 0  D) 4

21. The maximum number of comparisons needed for the binary search of a 2000 element array is
   A) 9  B) 15  C) 11  D) 14

22. Which statement about pointers is false?
   A) They are among C's most difficult capabilities to master.
   B) They enable programs to simulate call by reference.
   C) They are useful to create and manipulate dynamic data structures.
   D) They cannot be used to create data structures that do not grow and shrink at execution time.

23. Pointers can not be used to
   A) find the address of a variable in memory  B) reference values directly
   C) simulate call-by-reference  D) manipulate dynamic data structures

24. Which statement is false?
   A) All function calls in C language pass arguments call-by-value.
   B) Simulated call-by-reference enables a called function to modify variables in the calling function.
   C) Call-by-value is always more efficient than simulated call-by-reference.
   D) In C language, programmers use pointers and the indirect operator to simulate call-by-reference.

25. If bPtr is assigned b (the name of an array), then array element b[3] can alternatively be referenced with the pointer expression _______ in C language.
   A) bPtr + 3  B) b[ bPtr + 3 ]  C) *b [ bPtr + 3 ]  D) *( bPtr + 3 )

B. Short Answer  50%

1. Describe what is meant by each of the following.  10%
   (a) static data structure  (b) dynamic data structure  (c) stack  (d) queue  (e)
2. Construct a binary search tree from the following set of data encountered in order given \{7, 2, 4, 3, 8, 10, 12, 9, 11, 16, 14, 17\}. 5%

3. A binary tree is easier than a tree structure in programming, why? And what's the advantages to use a binary tree structure? 5%

4. (a) What is a heap? (b) Show the heap of the key set \{23, 42, 74, 13, 94, 58, 12\}. (c) How to perform a heap sort? What is the time complexity? 10%

5. C language provides four storage classes to determine an identifier's storage duration, scope and linkage. Explain the following types of allocation and delocation of variables. How to get those types of allocation in the C language? 10%
   - automatic storage duration
   - static storage duration

6. Given the following codes in a block-structured language: 10%

(I) ```c
int main()
{
    int a=100, b=200;
    fun(a,b);
    printf(a,b);
    return 0;
}
void fun(int x, int y)
{
    x=3;
    y=6;
}

(II) int main()
{
    int a=4, b=6;
    fun(a,b,a+b);
    return 0;
}
void fun(int x, int y, int z)
{
    x=7;
    y=10;
    int res=z^z;
```
printf(res);
}

a. Describe the output of (I) and what happens to variables a, b after return from function fun, if the parameters are passed by value, by address, by value/result.

b. Describe the output of (II) and what happens to variables res after return from function fun, if the parameters are passed by name.