

**2001-CE
COMP
STUD**

PAPER 2

MC

HONG KONG EXAMINATIONS AUTHORITY

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COMPUTER STUDIES PAPER 2

Subject Code 200

1. Read carefully the instructions on the Answer Sheet and insert the information required (including the Subject Code) in the spaces provided.
2. When told to open this book, you should check that all the questions are there. Look for the words '**END OF PAPER**' after the last question.
3. All questions carry equal marks.
4. **ANSWER ALL QUESTIONS.** You should mark all your answers on the Answer Sheet.
5. You should mark only **ONE** answer for each question. If you mark more than one answer, you will receive **NO MARKS** for that question.
6. No marks will be deducted for wrong answers.

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2001-CE-COMP STUD 2-1

There are 50 questions in this paper.

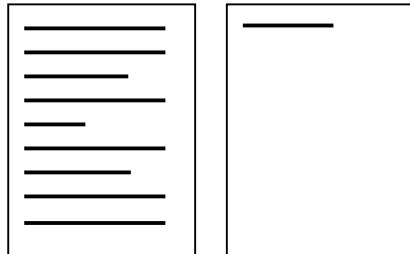
1. A computer company invites a famous chess player to play chess against a computer with high processing power.

This chess game is an application of _____ .

- A. computer assisted learning
 - B. multimedia
 - C. control system
 - D. artificial intelligence
2. Which of the following does NOT involve electronic fund transfer?
- A. purchasing a single-journey train ticket from a vending machine
 - B. paying a bus fare with a stored-value card
 - C. purchasing a shirt with a bank card
 - D. paying a utility bill by autopay
3. Which of the following is NOT an application of the Internet?
- A. electronic mail
 - B. printer sharing
 - C. file transfer
 - D. newsgroup
4. Mr Chan has submitted an electronic form for a job application through the Internet. In the field “Year of Birth”, he entered the current year.
- Which of the following validation checks can detect the error?
- A. range check
 - B. type check
 - C. check digit
 - D. control total



5. Peter has just finished typing a document using a word processing software. The layout of his document is as follows:



Which of the following formatting functions CANNOT allow Peter to adjust the whole document on one page?

- A. change the margins of the page
 - B. change the font size of the text
 - C. change the justification of the text
 - D. change the line spacing
6. Which of the following must be known in order to retrieve a file from a hard disk?
- (1) file type
 - (2) file name
 - (3) file size
- A. (2) only
 - B. (1) and (2) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)
7. Computer viruses can reside in _____ .
- (1) executable files
 - (2) text files
 - (3) document files
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (1), (2) and (3)

(This item was deleted.)



8. When a program is to be executed,
- A. it must be stored in a hard disk.
 - B. it must be loaded into the main memory.
 - C. the contents of the main memory must be cleared.
 - D. the user has to input data using the keyboard.
9. Which of the following is/are required to execute a computer program?
- (1) keyboard
 - (2) visual display unit
 - (3) memory
- A. (1) only
 - B. (2) only
 - C. (3) only
 - D. (1) and (2) only
10. Arrange the following in ascending order of access time.
- (1) floppy disk drive
 - (2) CD-ROM drive
 - (3) hard disk
 - (4) RAM
- A. (4), (2), (3), (1)
 - B. (4), (3), (2), (1)
 - C. (1), (4), (2), (3)
 - D. (3), (4), (2), (1)
11. A data file of size 1.4 Mbytes is to be downloaded through a network with a transfer rate of 56 Kbps (kilobits per second). What is the minimum time needed?
- A. 25.6 seconds
 - B. 51.2 seconds
 - C. 102.4 seconds
 - D. 204.8 seconds



12. Which of the following could double the range of a floating-point representation?
- A. increasing the length of the mantissa by one bit
 - B. increasing the length of the exponent by one bit
 - C. decreasing the length of the mantissa by one bit
 - D. decreasing the length of the exponent by one bit
13. When an instruction is fetched, it is stored in _____ .
- A. an accumulator
 - B. an instruction register
 - C. a memory address register
 - D. a program counter
14. What type of instruction will have its operand transferred to the program counter?
- A. a load instruction
 - B. a store instruction
 - C. a jump instruction
 - D. an input instruction
15. Which of the following programming languages is most suitable for controlling the movement of a robot?
- A. Pascal
 - B. assembly language
 - C. Structured Query Language (SQL)
 - D. COBOL
16. Which of the following must be used to produce an object file from a Pascal source program?
- (1) assembler
 - (2) compiler
 - (3) interpreter
- A. (1) only
 - B. (2) only
 - C. (3) only
 - D. (1), (2) and (3)



17. "Floating point overflow" is a kind of _____ .
- A. syntax error
 - B. run-time error
 - C. logic error
 - D. transcription error
18. Which of the following should be done before program coding?
- (1) program debugging
 - (2) problem analysis
 - (3) algorithm design
- A. (1) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)
19. Which of the following methods should be used to protect files from unauthorized access?
- A. data verification
 - B. data truncation
 - C. data validation
 - D. password
20. Which of the following is/are interactive processing?
- (1) using search engines
 - (2) playing computer games
 - (3) sending electronic mail
- A. (1) only
 - B. (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)



21. Consider the following spreadsheet:

	A	B	C
1	10	15	20
2	35	20	5
3			

Cell A3 contains the formula $=\#A1+A\#2$.

A # sign before any column letters or row numbers represents absolute addressing. Without the # sign, relative addressing is used.

If the formula stored in cell A3 is copied to cell B3, what will be the value shown in cell B3?

- A. 0
B. 25
C. 30
D. 45
22. Which of the following is/are effective for protecting a computer system from computer virus infection?
- (1) scanning the system with anti-virus software
(2) not opening files from unknown sources
(3) backing up files periodically
- A. (1) only
B. (1) and (2) only
C. (1) and (3) only
D. (1), (2) and (3)
23. A printer driver is a _____.
- A. software
B. hardware
C. disk drive
D. hard disk



24. A teacher reads a good passage. She would like to make a few amendments to the passage and distribute the printout to her students. If she does not want to re-type the whole passage again, which of the following device/system would she use?
- (1) a scanner
 - (2) an optical character recognition system
 - (3) a magnetic ink character recognition device
- A. (1) only
 - B. (3) only
 - C. (1) and (2) only
 - D. (1), (2) and (3)
25. Before a conditional branch instruction is executed, which of the following will be examined?
- (1) the status register
 - (2) the program counter
 - (3) the accumulator
- A. (1) only
 - B. (2) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)
26. Which of the following is NOT a computer program?
- A. a computer virus
 - B. an operating system
 - C. a program counter
 - D. a compiler
27. Which of the following error can be detected by a Pascal compiler?
- A. a syntax error
 - B. a run-time error
 - C. a logic error
 - D. an input error



28. Which of the following will make a computer program easy to read and understand?

- (1) adding comment statements
- (2) using meaningful variable names
- (3) using indentation

- A. (1) only
- B. (1) and (2) only
- C. (1) and (3) only
- D. (1), (2) and (3)

29. Which of the following are considered multi-media elements?

- (1) video
- (2) text
- (3) sound
- (4) graphics

- A. (1) and (3) only
- B. (1), (2) and (3) only
- C. (1), (3) and (4) only
- D. (1), (2), (3) and (4)

30. The structure of a database file is as follows:

Field	Size (byte)
Name	35
Sex	1
ID Card No	12
Blood Type	2
Address	50

What is the approximate file size if there are 50 records in the file?

- A. 100 bytes
- B. 500 bytes
- C. 5 Kbytes
- D. 50 Kbytes



31. When changing a password, what is the purpose of entering the new password twice?
- A. validation
 - B. verification
 - C. encryption
 - D. documentation
32. Which of the following is an example of a multi-user real time processing system?
- A. a payroll system
 - B. a bank account balance enquiry system
 - C. a multiple-choice question marking system
 - D. an electricity meter-reading reporting system
33. Which of the following can be found in an electronic mail?
- (1) a file attachment
 - (2) an address book
 - (3) an instant messaging application software
- A. (1) only
 - B. (2) only
 - C. (1) and (2) only
 - D. (1), (2) and (3)
34. Which of the following is responsible for carrying out feasibility studies?
- A. a programmer
 - B. a computer operator
 - C. a system analyst
 - D. a network administrator
35. Which of the following is a software?
- A. a web browser
 - B. a CD-ROM drive
 - C. a visual display unit
 - D. a modem



36. Which of the following is NOT a register?
- A. an instruction register
 - B. a status register
 - C. an accumulator
 - D. an arithmetic and logic unit
37. A(n) is used to translate a(n) program to a(n) program.
- | | | | |
|----|--------------------------------|--------------------------------|--------------------------------|
| | <input type="text" value="x"/> | <input type="text" value="y"/> | <input type="text" value="z"/> |
| A. | interpreter | object | source |
| B. | interpreter | source | object |
| C. | compiler | object | source |
| D. | compiler | source | object |
38. Which of the following is a disadvantage of using low-level language?
- A. The language is impossible to learn.
 - B. The execution time is very slow.
 - C. The language is machine dependent.
 - D. The source code is very long.
39. Which of the following are the functions of an operating system?
- (1) memory management
 - (2) input/output control
 - (3) user interface
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

40. Problem solving procedures include the following:

- (1) algorithm design
- (2) program coding
- (3) program debugging
- (4) problem definition
- (5) problem analysis
- (6) program documentation

Which of the following is the correct order of the problem solving procedures?

- A. 4→5→2→1→3→6
- B. 4→5→1→2→3→6
- C. 6→4→5→1→2→3
- D. 5→6→4→2→1→3

For questions 41-50, find the output of the given program.

```
41.  program p41;
      var x: integer;

      begin
        x := random(10) + 1;
        while (x < 1) and (x > 10) do
          begin
            write(x);
            x := x + 1
          end;
        writeln('END')
      end.
```

- A. END
- B. 678910END
- C. 12345678910END
- D. The output cannot be determined.

42.

```
program p42;
var i: integer;
    s: string;

begin
  s := 'ABCDEFGHIJ';
  for i := 1 to 10 do
    s := s + copy(s, i, i);
  writeln(length(s))
end.
```
- A. 10
B. 20
C. 55
D. 65
43.

```
program p43;
var x : array[1..4] of integer;
    y : array[1..4] of char;
    i : integer;

begin
  x[1] := 1;
  y[1] := 'A';
  for i := 2 to 4 do
    begin
      x[i] := x[i - 1] + i;
      y[i] := chr(x[i] + ord(y[i - 1]))
    end;
  writeln(y[4])
end.
```
- A. J
B. N
C. Q
D. T

44.

```
program p44;
var i: integer;
begin
  for i := 1 to 10 do
    if (i > 3) or (i < 6) then
      write(i);
    writeln('END')
  end.

```
- A. END
B. 45END
C. 3456END
D. 12345678910END
45.

```
program p45;
var x: integer;
begin
  x := 0;
  while x <= 100 do
    begin
      x := x + 10;
      case trunc(sqrt(x)) mod 2 of
        0: write('P');
        1: write('Q')
      end
    end;
    writeln
  end.

```
- A. PQQPQQPQQP
B. QPQPQPQPQP
C. PQQPQQPQQ
D. QPQPQQPPQPP

46.

```
program p46;
var num, err: integer;
    text: string;
begin
    text := '2001HKCEE';
    val(text, num, err);
    writeln(err);
end.
```
- A. 0
B. 4
C. 5
D. 2001
47.

```
program p47;
var a: array[1..12] of integer;
    k: integer;
begin
    a[1] := 1;
    a[2] := 1;
    for k := 3 to 8 do
        a[k] := a[k - 1] + a[k - 2];
    writeln(a[8]);
end.
```
- A. 8
B. 13
C. 21
D. 34

48.

```
program p48;
var source, secret: string;
    e, d: char;
    i, tmp: integer;
begin
    source := 'COMPUTER';
    secret := '';
    for i := 1 to length(source) do
        begin
            e := source[i];
            tmp := ord(e) + 13;
            if tmp > 90 then
                tmp := tmp - 26;
            d := chr(tmp);
            secret := secret + d;
        end;
        writeln(secret)
    end.

A. UXPRPBZC
B. IRELTBBQ
C. PBZCHGRE
D. VYBIRLBH
```
49.

```
program p49;
begin
    if not ((0 > -5) and (-7 < -5)) then
        write('1')
    else if 'z' > 'Z' then
        write('2');
    if 'computer' > 'company' then
        write('3')
    end.

A. 2
B. 13
C. 23
D. 123
```

50. program p50;
 var a, b: integer;
- procedure ONE(x: integer; var y: integer);
 var m: integer;
 begin
 m := 3;
 y := m + x;
 x := m + y;
 end;
- begin
 a := 4;
 b := 5;
 ONE(a, b);
 writeln(a:5, b:5);
 end.
- A. 4 5
B. 4 7
C. 10 5
D. 10 7

END OF PAPER

A Partial Character List for ASCII

Character	ASCII	Character	ASCII	Character	ASCII
0	48	J	74	d	100
1	49	K	75	e	101
2	50	L	76	f	102
3	51	M	77	g	103
4	52	N	78	h	104
5	53	O	79	i	105
6	54	P	80	j	106
7	55	Q	81	k	107
8	56	R	82	l	108
9	57	S	83	m	109
:	58	T	84	n	110
;	59	U	85	o	111
<	60	V	86	p	112
=	61	W	87	q	113
>	62	X	88	r	114
?	63	Y	89	s	115
@	64	Z	90	t	116
A	65	[91	u	117
B	66	\	92	v	118
C	67]	93	w	119
D	68	^	94	x	120
E	69	_	95	y	121
F	70	`	96	z	122
G	71	a	97	{	123
H	72	b	98		124
I	73	c	99	}	125

List of Operators and Reserved Words

+, -, *, /, div, mod, >, <, =, >=, <=, <>, and, or, not, sqrt, trunc, round, random, abs, +(string concatenation), length, ord, chr, val, str, copy, const, procedure, var, integer, real, char, string, boolean, true, false, text, array...of, program, input, output, begin...end, :=, for...to/downto...do, (*...*), if...then...else, while...do, repeat...until, case...of...end, write, writeln, read, readln, assign, reset, rewrite, eof, close



Appendix

List of Commands in Mnemonics

Op-code	Operand	Meaning
INP	XXX	input data to address XXX
OUT	XXX	output the contents of address XXX
STA	XXX	store the contents of accumulator to address XXX
LDA	XXX	load accumulator with the contents of address XXX
JMP	XXX	jump to address XXX
JPN	XXX	branch to address XXX if contents of accumulator are negative
JPZ	XXX	branch to address XXX if the contents of accumulator are zero
INC	XXX	increase the contents of address XXX by 1
DEC	XXX	decrease the contents of address XXX by 1
ADD	XXX	add to accumulator the contents of address XXX and store the result in accumulator
SUB	XXX	subtract from accumulator the contents of address XXX and store the result in accumulator
STP	-	stop



2001 HKCE Computer Studies (Paper 2)

Question No.	Key	Question No.	Key
1.	D	26.	C
2.	A	27.	A
3.	B	28.	D
4.	A	29.	D
5.	C	30.	C
6.	A	31.	B
7.	This item was deleted.	32.	B
8.	B	33.	A
9.	C	34.	C
10.	B	35.	A
11.	D	36.	D
12.	B	37.	D
13.	B	38.	C
14.	C	39.	D
15.	B	40.	B
16.	B	41.	A
17.	B	42.	D
18.	C	43.	D
19.	D	44.	D
20.	D	45.	D
21.	C	46.	C
22.	B	47.	C
23.	A	48.	C
24.	C	49.	C
25.	A	50.	B

