

(National Council for Vocational Awards)



Marking Scheme

Computer Programming C20013

Theory Examination 2004

Duration: Two Hours

Instructions to Candidates:

Answer any **three** questions

All questions carry equal marks

Return this exam/answer paper when finished

Extra paper is available from the exam supervisor if required

This written exam counts as 40% of the total module

NAME (PRINT):	
PPS NUMBER:	
DATE:	

(a) This program contains 5 errors that will stop it from compiling. List the errors. 20 marks

```
#include <studio.h>
main ()
{
  char name[20];
  int age
  printf ("Please enter your name and age:");
  scan ("%s %d", &name &age);
  printf ("Hello, %s.\n");
  if (age > 30)
    printf ("You are ancient!\n);
  else
    printf ("Pass the Pampers!\n");
}
```

	4 marks
1	
•	
	4 marks
2	
2	
	4 marks
3	
3	
	4 marks
4	
7	
	4 marks
5	
3	

(b) What is a variable used for? 10 marks

```
Unsatisfactory: 0; Unclear: 6, 7; Correct: 10;
```

(c) What is the difference between an integer and a float variable? Give a sample of each type of data. 10 marks

```
Unsatisfactory: 0; Unclear: 6, 7; Correct: 10;
```

Question 2. Total 40 marks.

Unsatisfactory: 0; Unclear: 6, 7; Correct: 10; b) Write the general form of the if else statement: 10 marks Unsatisfactory: 0; Unclear: 6, 7; Correct: 10; c) Write a C program containing a loop that writes out the even numbers between 10 and 100 20 ma Unsatisfactory: 0-9; Imperfect: 10-15; Largely Correct: 16-20;	ite the general form of the if else statement: 10 marks	
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	Unsatisfactory: 0-9; Imperfect: 10-15; Largely Correct: 16-20;	

Question 3. Total 40 marks.

(a) Draw a diagram to represent the state of the **numbers** array after this program finishes. 30 marks

```
#include <stdio.h>
main ()
{
  int numbers[6], loopvar;
  loopvar = 0;
  while (loopvar <= 5)
  {
    numbers[loopvar] = 500 - (loopvar * loopvar * loopvar);
    if (loopvar == 3)
    {
       numbers[loopvar] = 500 + loopvar * 2;
    }
    loopvar++;
  }
}</pre>
```

Draw your diagram here:

```
Unsatisfactory: 0-9; Imperfect: 10-19; Largely Correct: 20-30;
```

(b) What screen output is generated by this program line: 10 marks

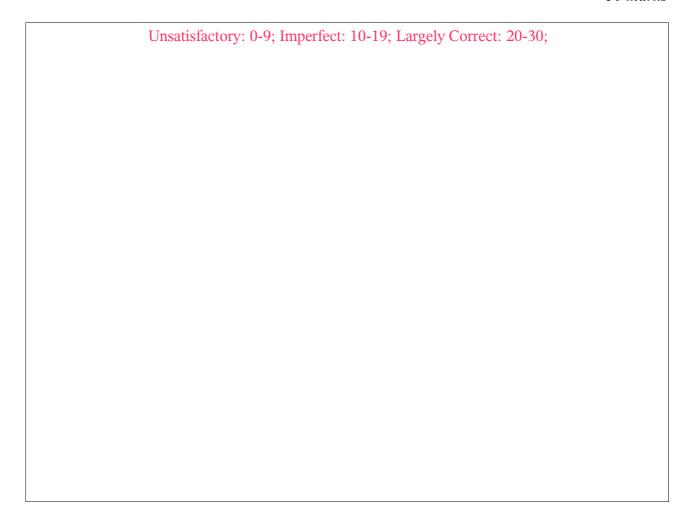
```
printf ("%c%c%c%c%c%c%c%c\n", 71,111,111,100,32,76,117,99,107);
```

```
Unsatisfactory: 0; Unclear: 6, 7; Correct: 10;
```

Question 4. Total 40 marks.

(a) Write a C loop	p to read in an a	rray of 30 nume	ric variables; ther	write another	loop to	write out
every second elen	nent of the array.	Also calculate th	ne average of <i>all</i> t	the values in the	array.	

30 marks



(b) The control variable for a **while** loop should appear in a program not less than four times. List those times. 10 marks

1	2.5 marks
2	2.5 marks
3	2.5 marks
4	2.5 marks

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Printable alphanumeric and punctuation characters used in normal document text

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