



Comhairle na nDámhachtainí Breisoideachais agus Oiliúna
Further Education and Training Awards Council

Computer Programming C20013

Theory Examination 2008

This written exam counts as 40% of the total module

Duration: Two Hours

INSTRUCTIONS TO CANDIDATES:

1. Answer any **three** questions
2. All questions carry equal marks
3. Return this exam paper when finished along with your answer book
4. Answer the questions using the spaces in this exam booklet

Candidate Name: _____ **Date:** _____

PPS Number: _____

Question 1. *Total 40 marks.*

(a) This program contains 4 errors that will stop it from compiling. List the errors.

20 marks

```
#!/usr/bin/perl
print Please enter the first number: "
$first = <STDIN>
chop $first;
print "Now enter the second number: ";
$second = <STDIN>;
chop second;
$result = $first * $second;
print "The product of the numbers is: $result.\n";
```

1	
2	
3	
4	

(b) What is the difference between a variable prefixed with \$ and one prefixed with the @ symbol?

10 marks

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(c) In the array @parts what number would replace y to represent the *last* element in an array of 10 elements?

10 marks

\$parts[y]	y = ?_____?
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Question 2. *Total 40 marks.*

(a) Write the general form of the **while** statement:

10 marks

(b) Write the general form of the **if...else** statement:

10 marks

(c) The following perl code will compile and run but will not generate the desired output. Why?

20 marks

```
#!/usr/bin/perl
# A sample program.
# This program should write out the letters a..z
# of the alphabet, one on each line.
$startvar = 97;
$stopvar = 122;
$counter = $startvar;
while ($counter <= $stopvar)
{
    # This next line converts/formats & prints the character
    printf ("%c\n", $counter);
    $counter--;
}
```

Question 3. *Total 40 marks.*

(a) Indicate the values in each of the variables **\$a**, **\$b** and **\$c** after this web script finishes:

3 x 10 marks

```
#!/usr/bin/perl
print "Content-type: text/html\n";
print "<html><body>\n";
$num = 0;
$a = 2 * 2 * 2 * 2;
while ($num <= 5)
{
    print "<br>$num";
    $c = $num * 5;
    $num=$num+1;
}
$b = $num/2;
$c = $c * 2;
print ("<hr>\n");
print ("<br>A=$a,<br>B=$b,<br>C=$c\n");
print ("</body></html>");
```

<i>Variable</i>	<i>Value</i>
\$a	
\$b	
\$c	

(b) What screen output is generated by this short program using the *printf* command:

10 marks

```
#!/usr/bin/perl
printf ("%c%c%c%c%c%c%c%c%c%c%c%c%c%c%c%c%c%c%c%c%c\n",
89,111,117,039,108,108,32,110,101,118,101,114,32,119,97,108,
107,32,97,103,97,105,110,33);
```

Question 4. *Total 40 marks.*

(a) Write a perl web script containing a loop to write out every number from 2 to 20 and then write out the total of all the numbers which have been displayed. Each item should be on a separate line in the web page generated.

20 marks

(b) Write a short program with a **while** loop that repeatedly asks for numbers and writes out the square (*i.e.* the product of the number by itself) of each number. The loop should stop when it receives the value **-1**.

20 marks

Figure 1. *The ASCII table.*

		032 SP	033 !	034 "	035 #
036 \$	37.00%	038 &	039 '	040 (041)
042 *	043 +	044 ,	045 -	046 .	047 /
048 0	049 1	050 2	051 3	052 4	053 5
054 6	055 7	056 8	057 9	058 :	059 ;
060 <	061 =	062 >	063 ?	064 @	065 A
066 B	067 C	068 D	069 E	070 F	071 G
072 H	073 I	074 J	075 K	076 L	077 M
078 N	079 O	080 P	081 Q	082 R	083 S
084 T	085 U	086 V	087 W	088 X	089 Y
090 Z	091 [092 \	093]	094 ^	095 _
096 `	097 a	098 b	099 c	100 d	101 e
102 f	103 g	104 h	105 i	106 j	107 k
108 l	109 m	110 n	111 o	112 p	113 q
114 r	115 s	116 t	117 u	118 v	119 w
120 x	121 y	122 z	123 {	124	125 }
126 ~	127 □				
Printable alphanumeric and punctuation characters used in normal document text					

