FETAC

Further Education and Training Awards Council

Comhairle na nDámhachtainí Breisoideachais agus Oiliúna

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Computer Programming
C20013

Theory Examination 2009
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 any answer book used
4. **Answer the questions using the spaces in this exam booklet**

Candidate Name: _____   **Date:** _____

PPS Number: _____

Question 1. *Total 40 marks.*

(a) This short web script contains 4 errors that will stop it from operating. List the errors.

20 marks

```perl
#!/usr/perl
$return_when="later";
print "Content-type: text/html\n"
print "<html><body><br />\n";
print "<h1>Site under construction.</H1>";
if ($return_when ne "")
  print "Please return:<br />";
  print $return when;
}
print "<br /></body></html>\n";
```

1	
2	
3	
4	

(b) What is the difference between a variable prefixed with **$** and one prefixed with the **@** symbol? *10 marks*

(c) Why do we initialize variables?

10 marks

Question 2. *Total 40 marks.*

(a) Give the general form of the *foreach* structure: *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 due to either one of two semantic errors. What are they both?

20 marks

```perl
#!/usr/bin/perl
# Welcome to my square!
$counter = 1;
$stopvar = 28;
print "+++++++++++++++++++++++++++++++\n";
while ($countervar <= $stopvar)
{
  print "+                            +";
  $counter++;
}
print "+++++++++++++++++++++++++++++++\n";
```

1	
2	

Question 3. *Total 40 marks.*

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

2 x 10 marks

```perl
#!/usr/bin/perl
print "Content-type: text/html\n";
print "<html><body>\n";
$num = 0;
$a = 15 * 2;
while ($num <= 3)
{
  print "<br>$num";
  $b = $num * 5;
  $a = $num * 5;
  $num=$num+1;
}
$b = $num/2;
print ("<hr>\n");
print ("<br>A=$a,<br>B=$b\n");
print ("</body></html>\n");
```

Variable	Value
$a	
$b	

(b) What screen output is generated by this short program using the converting/formatting aspect of the *printf* command and the ASCII table:

20 marks

```perl
#!/usr/bin/perl
@nums=(65..90);
foreach $num (@nums) {
  printf ("%c", $num);
}
print "\n";
$count=122;
while ($count >= 97) {
  printf("%c", $count);
  $count--;
}
print "\n";
```

Question 4. *Total 40 marks.*

(a) What is a paradigm?   *10 marks*

(b) Write a short program with a **while** loop that repeatedly asks for numbers and writes out a running average. The loop should stop when it receives the value **-1**.

30 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

Rough-Work Page

Rough-Work Page