Bournemouth University

Date: 10/06/2013
Time: start – end
Level: L4

Exam Name: **ZOMBIES IN POPULAR MEDIA AND MATHEMATICS**

Unit refs: **ZPMM**

INSTRUCTIONS TO CANDIDATES

See Front Page Instruction Samples document [here].
This could include information about:

If question paper needs to be handed in

Questions to answer

Allocation of marks

Where / how to answer questions (e.g. answer books / MCQ answer sheet etc)

Supplied materials

Permitted materials / equipment

Note, this list should be created without bullet points (hence the \item[] and the 0pt leftmargin)

SECTION A

Answer ALL Questions

1 Zombies in films . . . . . (15)

Consider Zombies in films.

1. a) Name some films with Zombies [5]

1. b) State the average number of characters eaten by a single Zombie in "'28 Days Later"'. Use the following formula: [10]

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

SECTION B

Answer Only ODD numbered questions

2 Zombie Programming ..... (20)

Consider the following code segment:

```
#include <iostream>
using namespace std;

int main ()
{
  cout << "Hello World!";
  return 0;
}
```

2. a) In your own words, explain:

2. a) i) Was this code produced by a Zombie? If so, why? [5]

2. a) ii) How would you improve on the above code? [5]

2. b) Write a page essay on any topic you like. Appropriate use of references required. [10]

3 Zombie Algorithms . . . . . (15)

3. a) Consider the following algorithm:

Require: $n \geq 0$
Ensure: $y = x^n$
  $y \leftarrow 1$
  $X \leftarrow x$
  $N \leftarrow n$
  while $N \neq 0$ **do**
    if N is even **then**
      $X \leftarrow X \times X$
      $N \leftarrow N/2$
    else $\{N$ is odd$\}$
      $y \leftarrow y \times X$
      $N \leftarrow N - 1$
    end if
  end while

Describe in your own words the thought processes required for a Zombie to generate this algorithm. How can the promise of fresh brains serve as a motivators? [10]

3. b) Admire our institution's mighty logo:

Bournemouth University

Draw this in a manner similar to a Zombie. Coloured pens are provided. [5]

Name of Unit leader . . . . Anne Onymous
Ext No. 60000
Name of PSO . . . . . John Doe
Ext No. 60000