**Worksheet 1 - Programming Concepts Introduction**

1. A computer program… (mark all correct answers)

□ can be a list of instructions written in plain English

□ is something which the developer writes

□ is a list of instructions written in a programming language

□ processes information and outputs data

1. The computer… (mark all correct answers)

□ without programs is still a very intelligent machine

□ without programs is a dumb machine

□ can only do what it is instructed to do

□ using programs, can process data and output information

1. Raw facts, such as numbers, letters, and words are… (mark **one** correct answer)

□ commands

□ information

□ programs

□ data

1. A programming language… (mark all correct answers)

□ must be ambiguous

□ must be unambiguous

□ must be formally-defined

□ can contain synonyms and metaphors

1. Different programming languages exist because… (mark all correct answers)

□ you always need to use multiple languages to write your program

□ each have their strengths and weaknesses

□ developers can prefer one over another

□ you can just learn one and use it for anything and everything

1. Concepts common to all programming languages include… (mark all correct answers)

□ Variables

□ Scripts

□ Control Structures

□ Having an IDE

1. If you were to write a desktop application you might choose… (mark all correct answers)

□ HTML

□ Java

□ JavaScript

□ C#

1. Pseudo-code… (mark all correct answers)

□ can be in the form of a short paragraph

□ shows a sequence of actions (an algorithm)

□ is a formal language

□ is an informal language

1. Pseudo-code is used… (mark all correct answers)

□ when the programmer does not know any programming language

□ during the design stage

□ after the actual coding

□ to facilitate understanding to humans

1. A variable in programming… (mark all correct answers)

□ is a program which can change

□ is a storage location intended to hold a value

□ is a storage location intended to hold an image

□ has a name

1. A control structure in programming… (mark all correct answers)

□ is a structure which enables the program to make a decision

□ is a program which controls an external device

□ is a piece of code which terminates the program

□ usually makes use of one or more conditions

1. The syntax of a programming language… (mark all correct answers)

□ can be changed by any programmer

□ helps to define whether a piece of code is valid or invalid

□ is made up by a set of rules which need to be followed

□ are comments that you put in your code

1. IDE stands for… (mark all correct answers)

□ Iterated Development Environment

□ Iterated Deep Environment

□ Integrated Development Enrolment

□ Integrated Development Environment

1. An IDE is… (mark all correct answers)

□ a language which is universal

□ a program which helps the end-user to run the program

□ a program which helps developers to code the program

□ a program which helps developers/testers to test and debug the program

1. Some IDEs include intelligent code completion. This means that… (mark all correct answers)

□ you can provide the IDE with a design & it gets automatically converted into a program

□ the IDE automatically takes backups of your code

□ the IDE suggests what you might want to type next, to reduce typos

□ the IDE automatically builds/compiles your code

1. Which of the following software are considered to be IDEs? (mark all correct answers)

□ Microsoft Visual Studio

□ TextPad

□ NetBeans

□ Solitaire

1. A programming paradigm is… (mark **one** correct answer)

□ a way or style of programming

□ a design that you prepare before you start coding

□ another word for pseudo-code

□ a structure found in any programming language

1. The procedural programming paradigm… (mark all correct answers)

□ can only be used in web-applications

□ must make use of a lot of classes

□ makes use of procedures/sub-routines

□ is relatively easy to understand, use and test

1. The object-oriented programming paradigm… (mark all correct answers)

□ facilitates code re-use

□ makes use of objects which can communicate

□ can only be used for desktop-applications

□ makes code re-use impossible

1. The declarative programming paradigm… (mark all correct answers)

□ contains a lot of complicated control-flow

□ usually results in relatively short code

□ usually results in long code

□ expresses logic only, with no control-flow

1. The functional programming paradigm… (mark all correct answers)

□ facilitates code reuse

□ usually results in relatively short code

□ is used for programs which evaluate mathematical functions

□ expresses logic only, with no control-flow

1. When using, the event-driven programming paradigm… (mark all correct answers)

□ program flow is determined randomly

□ your program can make use of a GUI

□ program flow is determined by events

□ you usually associate code (actions) with events

1. Which of the following statements are correct? (mark all correct answers)

□ a programming language can only fall under one specific paradigm

□ a program can only be written using a single paradigm

□ a program can be written using multiple paradigms, for e.g. event-driven and OOP

□ a programming language can be a multi-paradigm language