National College of Ireland

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Higher Diploma in Science in Computing – Full-time – Year 1 – HDMAICT1
Higher Diploma in Science in Computing – Full-time – Year 1 – HDMAICTJAN

Autumn / Repeat Examinations - 2016/2017

Saturday 12th August, 2017
2.00pm – 4.00pm

Server Side Development

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Answer all 3 questions

Duration of exam: 2 hours
Attachments: none

Question 1 [40 marks]

A. What is a Web Framework?
[15 marks]

Explain how software development differs when using a Web Framework from the point of view of a developer in comparison with not using a Framework and developing a solution from scratch

B. Give the Rails command for the following tasks:
[25 marks]

- **Create a New Rails project called MusicBusters**
- **Start the Rails server with the Cloud9 parameters**
- **Generate a controller Catalog_Items with four actions: index, show, new, edit**
- **Create a scaffold for Discs containing a Name, Band, Year, Price and Producer**

Question 2 [30 marks]

A. Given the following the following code what would be the output on the screen?
[10 marks]

```
# Everything is an object
a=[1,2,3,4]
puts 1.class
puts 1.234.class
puts "A String".class
Puts a.class
```

B. Complete the following Array Methods in order to print what it is requested. Fill the question marks characters with the right method or methods
[20 marks]

```
# Array Methods array_4 to have the following values
array_4 = [100, 100, 300, 20, 40]

# complete the method needed to print the right value
puts "Array Size : " + array_4.??????????
puts "Does the Array Contains 100 : " + array_4.?????????
puts "How Many 100s : " + array_4.??????????
puts "Array Empty : " + array_4.??????????
```

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Question 3 [30 marks]

A. Define and explain the following concepts:
[20 marks]

- **Object-oriented programming (OOP)**
- **Encapsulation**
- **Class**

B. Given the following code explain what it does:
[10 marks]

```
class Person
   def set_name( aName )
        @name = aName
   end

   def get_name
       return @name
   end
end

class Book
   def initialize( aName, aDescription )
       @name = aName
       @description = aDescription
   end

   def to_s
      "The #{@name} book is #{@description}\n"
   end
end

person1 = Person.new
person1.set_name( "John Mc" )
puts person1.get_name
b1 = Book.new("Ruby", "this is a great Ruby book!!")
b2 = Book.new("Rails", "A great introduction to Rails!!")
puts b1.to_s
puts b2.to_s
puts "Inspecting 1st Book: #{b1.inspect}"
```