GCST

1.2.3 SOFTWARE DEVELOPMENT

TOPIC WISE EXAM QUESTIONS

A-LEVEL OCR

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SPEC

1.2.3 Software Development	a) Understand the waterfall lifecycle, agile methodologies, extreme programming, the spiral model and rapid application development. b) The relative merits and drawbacks of different methodologies and when they might be used. c) Writing and following algorithms.	Candidates need to understand the following models that can be followed to produce a software system; the waterfall lifecycle, agile methodologies (specifically extreme programming); the spiral model and rapid application development). Candidates need to understand the tasks, processes, benefits and drawbacks of each model and the similarities and differences between each. They need to understand where each model is most suitable to use, and be able to justify the use in a situation. Candidates need to be able to write algorithms using pseudocode and/or program code. Candidates need to be able to follow the code as shown in the OCR pseudocode guide, but are not expected to write code in this syntax. Candidate's code is not expected to be syntactically correct, but must use appropriate code structures.

2 Taylor is designing a program for a client who would like to simulate earthquakes on major cities around the world in 3D. The client would like to be able to view any stage of an earthquake such as:

1. the build-up of the earthquake
2. the earthquake taking place
3. the aftershocks of the earthquake.

The client would also like to be able to play the simulation at different speeds. For example, a slow, normal or fast speed.

(c) Taylor is deciding which software development methodology to use to write the program. The client has stated that they would like the program as soon as possible and want to be heavily involved during the program creation.

(i) Describe the difference between the spiral model and the waterfall model.

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..... **[4]**

(ii) Give **two** reasons why the waterfall model is not suitable for Taylor.

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2 .....

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[2]

(iii) Name **and** describe **one** other model of software development.

Name .....

Description .....

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[2]

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2022

5 **(f)*** The programmer has been asked by a client to create a complex computer program. Compare the spiral model and waterfall lifecycle methodologies for this task.

You should include the following in your answer:

- how both methodologies could be used to develop a complex computer program
- the benefits of each methodology for this task
- the drawbacks of each methodology for this task. **[9]**

1 Ruhail owns ten different function rooms which can be hired by different business customers to hold meetings. He would like a program to manage the booking process of each room.

Customers should be able to enter the date they want to hire a function room, and then a list of available rooms will be displayed. Customers can then select which room they want to hire. Customers can then enter their payment details which are then checked and then a confirmation email is sent to the customer.

(e) Ruhail will make use of a software development life cycle methodology.

State **two** software development methodologies that Ruhail could consider using.

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2 .....

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[2]

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2019

6 A company makes anti-virus software.

In order to keep up to date with the latest virus threats, the company is continually updating their software.

The programmers use an Extreme Programming approach when developing the updates.

(c) Explain what is meant by Extreme Programming and why it is a suitable approach in this case.

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..... **[4]**

2018 AS - Level

4* A software company is developing a mobile phone application for a client which will allow customers to book cinema tickets, and is deciding between using the waterfall lifecycle or rapid application development.

Discuss the two software development methodologies the software company is considering and recommend which it should use. **[9]**

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2017

10 A software development team is writing a word game.

The team is using Rapid Application Development.

(a) Describe the Rapid Application Development process.

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..... **[4]**

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EXTRA

1. A software company decides to release a duplicate file finder which it has named "De-Duplicator". Duplicate files are files that are exactly the same (bit for bit identical). Space is often wasted on computers by having multiple versions of the same file. Duplicate file finders are programs that find and identify duplicate files on a hard drive so that they can be removed.

   * The software team that produces De-Duplicator decides to make a new version that can detect duplicated images the previous version could not. The software team must decide which methodology they will use for the project. Some members of the team suggest extreme programming whilst others would prefer to use the waterfall lifecycle.

   Discuss the **two** methodologies **and** justify which you would recommend. [12]

2. A software development company is building an operating system for a mobile phone that is in the process of being designed.

The developers follow the waterfall lifecycle.

(i) List **three** stages of the waterfall lifecycle.

1 _____

2 _____

3 _____ [3]

(ii) Justify why the waterfall lifecycle is suited to the development of the operating system.

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_____ [2]

(iii) Give **one** disadvantage of using the waterfall lifecycle to develop the operating system.

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_____ [1]

If you found this useful, drop a follow to help me out!

THANK YOU!

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