Task A

What is meant by the following terms:

Fault tolerance:

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| The prevention of data loss if a component fails. |

Disaster recovery plan:

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| The process of rebuilding an organisations data after a disaster. A company will need a detailed  disaster recovery plan that highlights step by step how the business will recover. It should include  details of strategies to deal with primarily the loss of data but also hardware, staff and buildings. |

Task B

Complete the table below to identify the pros and cons of using full and incremental backup.

|  |  |  |  |
| --- | --- | --- | --- |
| **Full backup** | | **Incremental backup** | |
| Pros | Cons | Pros | Cons |
| Backups all the data files | It could take a significant time to back up the entire system, | Only the changes are backed up – faster to perform. | Takes longer to restore all the files because of it needs to restore the full and all the incremental backups. |
| Safer as it’s easier to restore. | Might not be feasible if only a few files are changed between backups. | Each backup will take less memory space to store. |  |
|  |  | Software/OS settings unlikely to have changed between backups. |  |

Task C

Explain why a full backup might be just as quick as doing an incremental backup.

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| If there are a small number of files that need to be backed up then doing a full backup would not actually take that long to do so there would be no reason to change to incremental. |

Task D

Explain how differential backup works.

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| All files that have been created or changed since the last full backup are copied. Requires the last full backup and just the one differential backup to restore. |

Task E

Complete the table below to identify the pros and cons of using a differential backup.

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| **Pros** | **Cons** |
| Restoring is faster than incremental as only the last full backup and latest differential is needed. | Restoring is slower than full back up as the last full backup AND the latest differential backup is needed. |
| Backing up is faster than full back up as only changed files are required. | Backing up is slower than incremental as everything changed since the last FULL back up only is backed up. |
| The storage space requirements are smaller than full backup. | The storage space requirements are higher than incremental backup. |

Task F

Explain how Grandfather – Father – Son (GFS) backup strategy works.

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| A backup strategy where data is backed up generationally. For example: A full machine backup performed monthly (Grandfather) and held offsite. A full backup done on a weekly basis (Father) and held locally. A daily (or more often) differential backup (Son). |

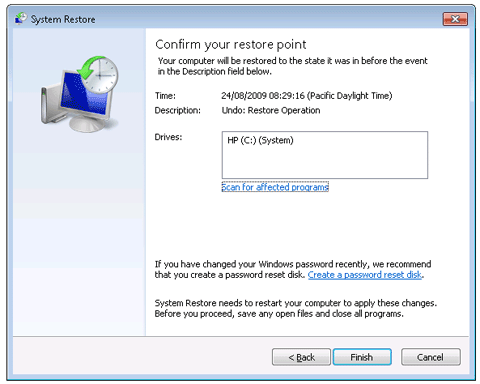
Task G

Complete the table below to identify the pros and cons of using a GFS backup.

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| **Pros** | **Cons** |
| Easy to operate | It only applied to schedule backup, and could not contiguously back up. |
| Saves storage space | The restore process will be complex and will be inefficiently. |
| Create more recovery/restore points while using less storage space. | You have to operate is manually. |

Task H

Windows provides an in-built feature called a system restore.



What is the purpose of a system restore?

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| System Restore is a feature in Microsoft Windows that allows the user to revert their computer's state to that of a previous point in time, which can be used to recover from system malfunctions or other problems. |

Identify some of the issues of using a system restore to retrieve lost data.

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| * New accounts will be wiped out. If you created any new user accounts since the last restore point was set, they'll be erased, though any data files that user created will remain. * Newly installed software is only partially removed. System Restore deletes executable files added after the restore point was created, but not the programs' shortcuts and other files. * When you turn off System Restore, all existing restore points are lost. Also, you can't create a restore point while your system is in Safe Mode, so any restores performed in that mode cannot be undone. |

Task I

Complete the table below to identify how these methods of storage could be used for backup purposes.

|  |  |
| --- | --- |
| Solid-state storage (e.g. USB Flash Drive) | Uses flash memory to store data. Can hold large amounts of data and are more robust as they have no moving parts. If the device is something like an SD card or USB flash drive then this is portable because it’s small, lightweight and easy to carry around. |
| Cloud storage | Stores data and files at a remote location using the Internet. When data is sent to be stored on the cloud, it is sent to a server that is hosted by an external company. |
| Magnetic storage (e.g. External/Internal Hard drive) | Hard drives store large amounts of data. If the Hard drive is external then they are portable, cheap and are quite efficient. |

Task J

Describe the purpose of backing up data

Before you write your description, look at the answer builder tool underneath the help you.

|  |  |
| --- | --- |
| Description:  Backing up means to create a duplicate copy of an existing file or set of files. The reason this is done is to help organisations to help re-build as part of their disaster recovery plan. Two common methods used are full and incremental backup. Full will backup all the data regardless whereas, incremental will backup what has been changed since the last one. | Example: |
| Answer builder:   |  |  |  | | --- | --- | --- | | ⚫ | ⚫⚫ | ⚫⚫⚫ | | What does backing up data mean? | Why is data backed up? | Provide some examples of backup methods | | |

Could mention other methods of backup such as differential and GFS