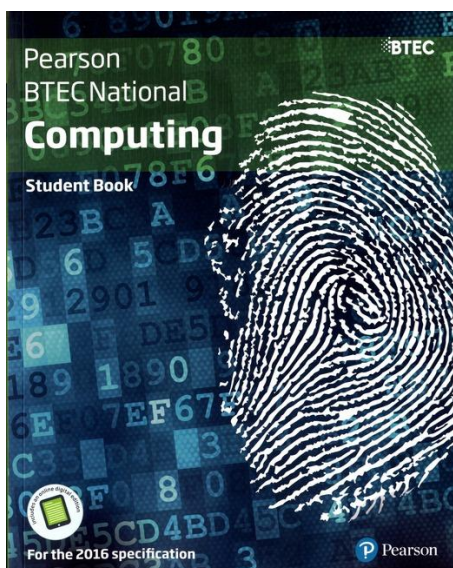


# BTEC Level 3 Nationals in Computing: Unit 2

Your free sample of the student  
book: preparation for  
assessment

(BTEC National Computing: Student Book 1 (with  
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## Getting ready for assessment

This section has been written to help you to do your best when you take the assessment test. Read through it carefully and ask your tutor if there is anything you are still not sure about.

### About the test

The assessment test will last 1 hour and 45 minutes and there are a maximum of 80 marks available. There are 3 types of question in the test:

- ▶ annotated diagram questions
- ▶ short answer questions worth 1–2 marks
- ▶ a longer answer question worth up to 12 marks.

Remember that all the questions are compulsory and you should attempt to answer each one.

Each question will state how many marks are on offer for its completion. You should attempt all the questions.

### Sitting the test

*Arrive in good time so you are not in a panic.*

The test will be carried out under supervised conditions.

- ▶ You may use a calculator.
- ▶ Internet access is not permitted.
- ▶ You must not bring anything into the supervised environment or take anything out without your tutor's knowledge and approval.

*You will not be allowed to take your mobile phone into the exam.*

Make sure that you arrive in good time for each test session and check that you have everything you need for the test ahead of time.

Listen to, and read carefully, any instructions you are given. Lots of marks are lost through not reading instructions properly and misunderstanding what you are being asked to do.

Organise your time, based on the marks available for each question. Set yourself a timetable for working through the test and then stick to it – do not spend ages on a short 1–5 mark question and then find you only have a few minutes for a longer 7–8 mark question.

*Remember that you cannot lose marks for a wrong answer, but you cannot gain any marks for a blank space!*

Ensure that you check all sides of the assessment task before starting work.

Ensure that you leave yourself enough time to check through your work. Proofread and correct any mistakes before handing in your work

### Command words typically used in assessment

Most questions contain command words. Understanding what these words mean will help you understand what the question is asking you to do.

Command word	Definition – what it is asking you to do
Analyse	Identify several relevant facts of a topic, demonstrate how they are linked and then explain the importance of each, often in relation to the other facts.
Calculate	Apply some form of mathematical or computation process.
Complete	Complete a diagram or process. This can be applied to problems/solutions of varying complexity.
Demonstrate	Illustrate and explain how an identified computer system or process functions. This may require a piece of extended writing, drawing a diagram or a combination of the two.
Describe	Give an account of something or highlight a number of key features of a given topic. This may also be in relation to the stages of a process.
Develop	Provide a solution to a problem, typically using an existing system or structure that must be improved or refined.
Discuss	Investigate a problem or scenario, showing reasoning or argument.
Draw	Represent understanding through the use of a diagram or flow chart.
Evaluate	Review and synthesise information to provide a supported judgement about the topic or problem. Typically, a conclusion will be required.
Explain	Make a series of linked points and/or justify or expand on an identified point.
Identify	Assess factual information, typically when making use of given stimuli. Requires a single word or short sentence answer.
Produce	Provide a solution that applies established constructs to a given computing problem.
Write	Produce a solution, or a mechanism used as part of a solution, to a given computing problem.

### Writing long answers

If you are writing a longer answer, try and plan before you start writing. Have a clear idea of the point your answer is making, and make sure that this comes across in everything you write, so that it is all focused on answering the question.

- ▶ Always make a plan for your answer before you start writing. Sketch this out so that you can refer to it throughout – remember to include an introduction and, if the command word is ‘evaluate’, a conclusion and think about the key points you want to mention in your answer. On this plan, set yourself some timeframes so that you make sure that you have time to cover everything you want to and, importantly, have time to write the conclusion!
- ▶ Try to keep your answer as focused on your key points as possible. If you find your answer drifting away from that main point, refer back to your plan.
- ▶ Make sure that you understand everything being asked of you in the activity instructions. It might help you to underline or highlight the key terms in the instructions so that you can be sure that your answer is clear and focused on exactly what you have been asked to do.

## Sample answers

For some of the questions, you will be given some background information on which the questions are based.

Look at the sample questions which follow and our tips on how to answer these well.

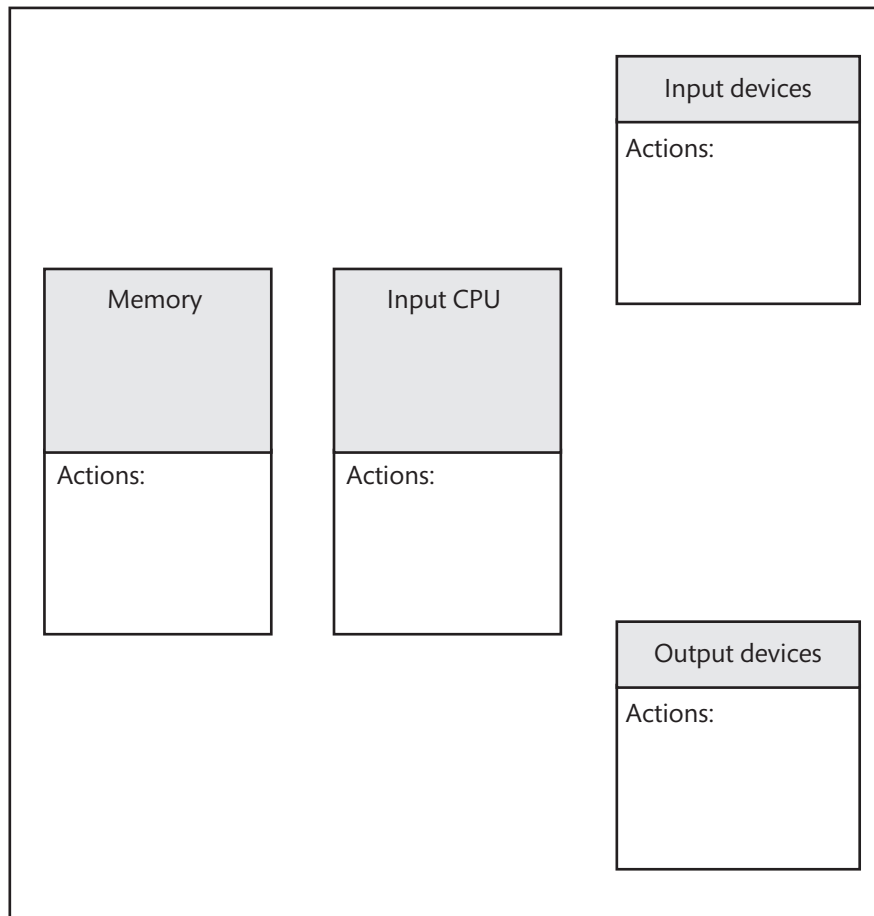
### Answering annotated diagram questions

You need to be careful when annotating a diagram. There will be a small amount of space so carefully choose words which are suitable for the **context** of the question.

Always read the question carefully and write the **most appropriate** answer.

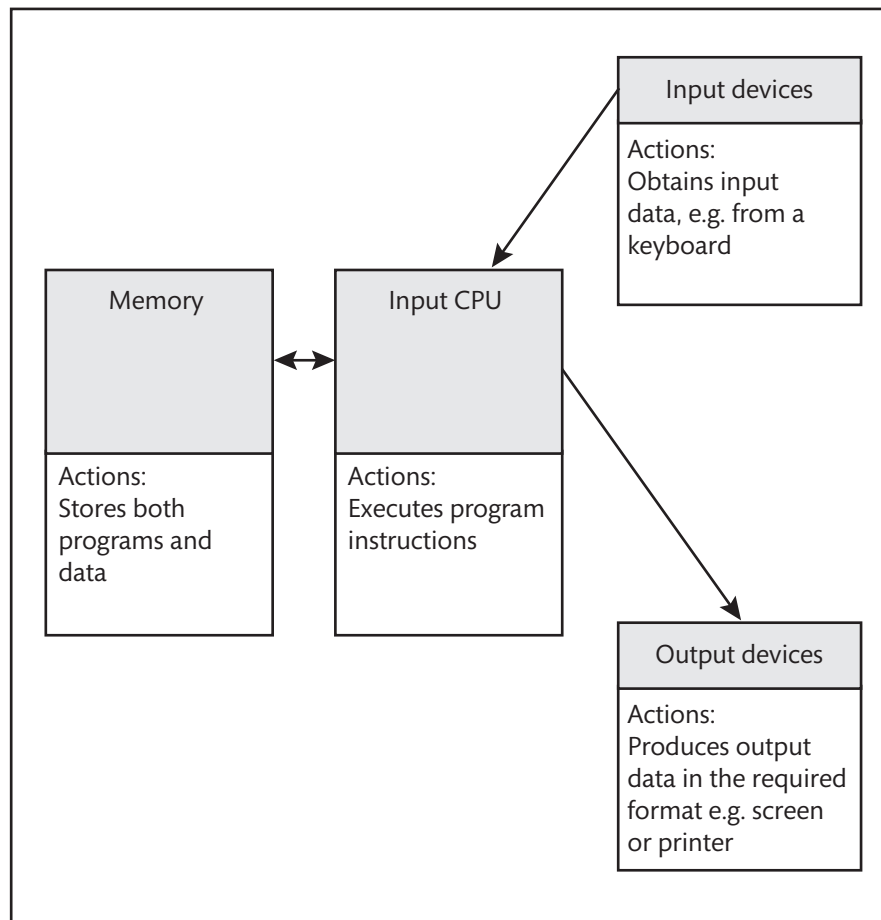
### Worked example

Many computers use the Von Neumann architecture for their CPUs. The main components of the Von Neumann architecture are show below. Complete the diagram by describing the actions performed by each component and the direction(s) in which data flows:



To get full marks the data flow arrows must point in the correct direction.

**Answer:**



The examiner will accept any other relevant phrasing/wording alternatives to the model answer given here.

### Answering short answer questions

- Read the question carefully.
- Highlight or underline key words.
- Note the number of marks available.

Make sure that you make the same number of statements as there are marks available. For example, a 2 mark question needs 2 statements.

Look carefully at how the question is set out to see how many points need to be included in your answer.

### Worked example

State two types of operating system than can be used on a computer [2]

**Answer:** Real-time, multi-tasking.

This answer is enough to achieve the 2 marks. Other possible answers include single user and multi-user.

## Answering extended answer questions

### Worked example

Analyse how RAID discs can be used by server computers

[6]

*For a question using the word 'analyse', you must identify several relevant facts of the topic, demonstrate how they are linked and then explain the importance of each, in relation to the other facts.*

**Answer:** Redundant Arrays of Independent Discs (RAID) is a disc storage technology that has two main benefits, improved performance and data security. Because the data is spread across at least two different discs this provides better performance because there are multiple drives reading and writing data rather than just one large drive. This is important for server computers because they usually support large number of users, all of which may be requesting data off the discs at the same time. Using RAID drives with multiple discs increases the number of simultaneous reads/write and therefore provides better performance for users.

*Make sure you state not just how the RAID system works but also why it is important in a server computer environment*

RAID also provides fault tolerance by spreading data across multiple disc drives using a technique called striping and by storing parity data across the drives. This means that if one drive in the RAID set fails the data that was on the drive can be calculated using the parity data. The most commonly used versions of RAID, RAID 5 and 6 allow a server computer to continue uninterrupted if a single drive fails. Once the failed drive is replaced the data on it is reconstructed. Fault tolerance is important for many servers because they often support business critical applications which would cause considerable business disruption if they were not available. There are no moving parts as the SSD uses flash storage which reduces the overall weight of the tablet making it more portable. There is no mechanical operation, which makes it silent and lets the SSD run without much heat generation.