

Commentary on candidate evidence

The candidate evidence has achieved the following marks for each question of this course assessment component.

Question 1

The candidate was awarded **13/20 marks**.

Question 1a (i)

The candidate was awarded **1/3 marks** as follows:

- ◆ The candidate noted that the area has gentle slopes (**1 mark**).
- ◆ No marks were awarded for the size of the site because it is incorrect.
- ◆ No marks were awarded for access because the site was not within touching distance of a road.

Question 1a (ii)

The candidate was awarded **6/8 marks** as follows:

- ◆ The candidate notes that the land is very flat due to contour lines being far apart. This means that construction on the land will be easy therefore, minimizing costs and the time to construct (**1 mark**).
- ◆ The candidate stated that the site is right next to the town of Amble meaning that once construction is completed, and the retail unit is open, there will be customers and business instantly (**1 mark**).
- ◆ The candidate stated that the site is next to the sea and not far from the mean high water line, meaning in extreme weather conditions there is a risk of flooding (**1 mark**).
- ◆ The candidate stated that the site is close to attractions like Warkworth Harbour and karting at 267036. This means when people come to these places, they may also go to the retail park for food, petrol etc due to its close proximity and convenience therefore, bringing more people in (**1 mark**).
- ◆ No marks were awarded for the statements about the site being close to the A1068 because it is not. The candidate repeats statements about people coming from other places.
- ◆ The candidate stated that there is a sewage works at 270036 meaning that the air pollution and bad smells will potentially lead to people avoiding the retail park or not returning (**1 mark**).
- ◆ The candidate stated that the site is close to residential areas in Amble meaning a workforce will be available. They qualify this by suggesting that shops will be ready for opening with no delays and will always have plenty of staff due to the multiple schools eg, 273044 providing senior school pupils for part time work (**1 mark**).
- ◆ No marks were awarded for statements concerning clean and piped water.

Question 1a (iii)

The candidate was awarded **4/4 marks** as follows:

- ◆ The candidate stated that the construction of the park may have a negative social impact as the already busy streets will become busier due to people trying to get to the site. This means that journey times for locals will increase due to the increased cars on the road, leading to frustration (**1 mark**).
- ◆ The candidate stated that an economic impact on the area from the development will be an increase in revenue for all shops and business because more people are coming to and through the area. This means that the town will bring in more income from the extra customers in shops (**1 mark**).
- ◆ No marks were awarded for statements about increased pollution because this is environmental.
- ◆ The candidate suggested that people's health may worsen from the air quality and people's sleep could be affected from the noise, leading to complaints and people possibly moving away from the area (**1 mark**).
- ◆ The candidate stated that the area may become more desirable for people wanting to move. This means there will be more of a demand for houses in the area leading to prices increasing (**1 mark**).

Question 1b

The candidate was awarded **2/5 marks** as follows:

- ◆ The candidate stated that this area is suitable for tourism because according to the atlas UK climate graph, the area receives only 625mm of rainfall annually. This means the area is often dry, allowing for all types of outdoor activities thus making it perfect for tourism (**1 mark**).
- ◆ No marks were awarded for statements about temperatures in July or prevailing winds because the reason given is a repeat of 'suited to tourism'.
- ◆ The candidate stated that 'another reason the area is suited to tourism is that we can see on the map at 2510 there is Alnmouth Bay. Bays are perfect for recreational water activities such as jet skiing or fishing' (**1 mark**).

Question 2

The candidate was awarded **25/30 marks**.

Question 2a (i)

The candidate was awarded **5/5 marks** as follows:

- ◆ The candidate stated that ‘to gather the data to draw the slope profile, students will use a compass to determine the direction/bearing of their 140m transect’ (**1 mark**).
- ◆ No marks were awarded for listing equipment.
- ◆ The candidate stated that the students should split their transect into areas of explicit changes in gradient, and work section by section (**1 mark**).
- ◆ The candidate stated that one student stands at the bottom of the slope with a ranging pole and the other student stands at the top of the slope. The distance between the two students is taken and noted (**1 mark**).
- ◆ The candidate stated that using the clinometer, the angle of inclination is recorded. This is repeated on each section of the slope (**1 mark**).
- ◆ The candidate stated that ‘to measure the angle, the ranging poles must be held vertical’ (**1 mark**).
- ◆ The candidate stated that the clinometer is placed on the ranging pole at a point and the reading must be taken when the clinometer is at the exact same point of the upper slope ranging pole (**1 mark**).
- ◆ No marks were awarded for the diagram however, drawing the diagram may have helped the candidate develop their points. Had the information in the diagram not been included in the text, the candidate would have been awarded 1 mark for the information in the diagram.

Please note: the candidate made 6 relevant points, which could all have received marks however, the total available marks had already been achieved.

Question 2a (ii)

The candidate was awarded **4/5 marks** as follows:

- ◆ No marks were awarded for the incorrect statement ‘every site along the transect has an equal chance’.
- ◆ The candidate stated that a systematic sampling technique is more effective than random sampling because in random sampling, entire sections of the study area can be missed out (**1 mark**).
- ◆ The candidate stated that systematic sampling is effective when the thing being measured is unknown (ie, need more information to do stratified sampling) (**1 mark**).
- ◆ The candidate stated that a systematic sampling technique is effective when drawing graphs of the data because one of the variables increases at regular intervals. In this case, average height of plant species could be plotted on a line graph with the X axis (distance along the slope) at regular intervals of 10m (**1 mark**).
- ◆ The candidate stated that systematic sampling is less effective for angle of slope. It would be most effective to use stratified sampling strategy where measurements are taken where the slope is seen to visibly change in slope angle/gradient (**1 mark**).

Question 2b (i)

The candidate was awarded **1/1 marks** as follows:

- ◆ The candidate stated the correct null hypothesis (**1 mark**).

Question 2b (ii)

The candidate was awarded **4/4 marks** as follows:

- ◆ The candidate stated (from the scatter graph) that if a line of best fit was drawn it would be in the negative direction (**1 mark**).
- ◆ The candidate stated that there would be a large distribution around the line (**1 mark**).
- ◆ No mark was awarded for repeating the point that PPMCC confirms a negative direction.
- ◆ The candidate stated that the value of 0.63 is larger than the significance level at 95%- which is 0.514 (**1 mark**).
- ◆ A carat was placed at 'but smaller than the 99% significance level which is 0.641'.
- ◆ The candidate stated that this suggests there is a 95% certainty that the relationship did not occur by chance (**1 mark**).
- ◆ A second carat was given (meaning a mark could then be awarded) for stating 'there is still a 5% chance it did occur by chance'. The relationship cannot be said to have strong significance' (1 mark).

Please note: the candidate made 5 relevant points, which could all have received marks however, only 4 marks are available.

Question 2b (iii)

The candidate was awarded **3/4 marks** as follows:

- ◆ The candidate stated that PPMCC can be used as there are two variables with a suspected linear relationship (shown by the scatter graph) (**1 mark**).
- ◆ The candidate stated that PPMCC is a stronger test of significance compared with SRCC because SRCC uses only rank of the data as opposed to PPMCC which uses exact values (**1 mark**).
- ◆ The candidate stated 'as a result it can be harder to calculate' (**1 mark**).
- ◆ No mark was awarded for the comments about PPMCC taking account of extreme values because no development of the reason was given.

Question 2c

The candidate was awarded **4/7 marks** as follows:

- ◆ No marks were given for the first sentence because it is incorrect.
- ◆ The candidate noted 'Such as soil depth; gravity pulls soil down to bottom of the slope and so there is greater depth 0.63m at 0m along slope and only 0.11m at 140m.' (1 mark)
- ◆ The candidate stated that having a greater volume of soil can allow more space for plant roots to grow and consequently, plants can get more nutrients and thrive better (1 mark).
- ◆ The candidate stated 'Likewise due to gravity, water accumulates at the bottom of the slope 47.95 soil moisture at 0m and in this study reduces by 38.5% to be only 9.4% soil moisture at 140m' (1 mark).
- ◆ The candidate stated that 'the plants need water to photosynthesise having greater soil moisture will mean greater growth rates of plants and taller average heights at bottom of slopes' (1 mark).
- ◆ No marks were awarded for 'bare ground' because it is descriptive rather than analytical.

Question 2d

The candidate was awarded **4/4 marks** as follows:

- ◆ The candidate stated that kite diagrams effectively show the abundance of a particular species along a transect (1 mark).
- ◆ The candidate stated 'by being put in a percentage form it can be easier to compare the abundance of each species' (1 mark).
- ◆ No marks were awarded for the idea of super imposed kite diagrams.
- ◆ No marks were awarded for the idea of a repeated easier comparison.
- ◆ The candidate stated 'it doesn't show information about the size of the area surveyed in the quadrat eg 1m² or 10cm³' (1 mark).
- ◆ The candidate stated that kite diagrams are symmetrical creating for a visually change in % (1 mark).
- ◆ The candidate stated that the kite diagram scale is small and fairly hard to be accurate with only in intervals of 10%. Therefore, it is difficult to know exactly what percentage is present particularly at the 0-10% range as they are close to the base line (1 mark).
- ◆ The candidate stated 'to overcome this limitation the kite diagrams could be drawn on graph paper so lines can be followed to get accurate percentages' (1 mark).

Please note: the candidate made 6 relevant points, which could all have received marks however, only 4 marks are available.