National Qualifications 2022

X833/77/11

Geography

WEDNESDAY, 27 APRIL

9:00 AM – 11:30 AM

Total marks — 50

Attempt ALL questions

Marks will be given for appropriately labelled sketch-maps and diagrams.

You must use the supplementary items and tracing overlays provided for annotation or as a base for diagrams. These resources should be placed inside the front cover of your answer booklet.

You should use the atlas provided.

Write your answers clearly in the answer booklet provided. In the answer booklet you must clearly identify the question number you are attempting.

Use **blue** or **black** ink. You may use pencil for the completion of Supplementary item B — tracing overlay.

Before leaving the examination room you must give your answer booklet to the Invigilator; if you do not, you may lose all the marks for this paper.

Total marks — 50 marks

Attempt ALL questions

Question 1 — Map interpretation

To answer this question you will need to use:

- Supplementary item A — Ordnance Survey (OS) Map Extract Southwold and Halesworth
- Supplementary item B — tracing overlay
- Supplementary item C — artist's impression of a solar farm
- the atlas provided.

You should make detailed use of the whole map extract as well as using your atlas appropriately. You should also carefully read the information in the text boxes.

> A developer is seeking a suitable site to build a solar farm. The development could potentially generate 5 megawatts of energy annually to supply to the National Grid. This would provide enough electricity to power 1500 homes. The solar farm would have a lifespan of 25 years and only require occasional maintenance. The site would consist of ground mounted solar panels, underground cables and a building to house equipment to enable the electricity to exit the site.

(a) On the tracing overlay (Supplementary item B) draw accurately to scale a suitable site for the solar farm. The size of the proposed site is to be 400 m × 250 m. **3**

(b) (i) Discuss, in detail, the reasons for your choice of location. You may wish to annotate your tracing overlay to support your answer.

   (ii) Analyse the social and economic impacts the development may have on the surrounding area. **8**

> A recent report revealed that biodiversity in the UK was in decline. 60% of the species monitored were recorded as declining over the past 50 years. Solar farms present an opportunity for biodiversity enhancement.

(c) Using Supplementary item C, explain ways in which the solar farm could enhance biodiversity. **4**

> The area on the map extract is part of East Anglia. This is an important agricultural region in the UK and is known as 'Britain's breadbasket'. 75% of the land is used for farming, in particular cereal crops, as well as a wide variety of fruit, vegetables, pigs and poultry.

(d) Analyse the factors which may have influenced farming in the area shown on the OS map extract. You should make use of the atlas in your answer. **5**

Question 2 — Gathering and processing techniques

A group of students is investigating changes from the CBD to the edge of a city.

(a) (i) Land use mapping is being considered for gathering appropriate data.
Explain how this technique would be carried out by the students.

(ii) Discuss the limitations that could be encountered when collecting the land use data. **5**

(b) Discuss how the students could gather **two** other appropriate data sets to further investigate changes from the CBD to the edge of a city. **5**

[Turn over

Question 3 — Geographical data handling

To answer this question, you will need to use:

- Supplementary item D
- the atlas provided.

    (a)   Study Diagrams 1 and 2 (Supplementary item D).

        Diagram 2 is a sphere of influence map showing the distribution of primary schools and their catchment areas in Sydney, Australia.

        (i)   Evaluate the effectiveness of using a sphere of influence map to show this information.

        (ii)   Discuss the factors that could account for the pattern of school catchment areas shown.   **7**

    (b)   Study Diagram 3 (Supplementary item D).

        A nearest neighbour analysis has been carried out to investigate the distribution of the primary schools.

        The result of this analysis is 1.53.

        (i)   Comment on the significance of this result, referring to the significant values diagram shown in Diagram 3.

        (ii)   Discuss the suitability of using nearest neighbour analysis to investigate the distribution of primary schools, or any other example of a distribution you have studied.   **7**

    (c)   Study Diagrams 4 and 5 (Supplementary item D).

        Diagrams 4 and 5 show data relating to student enrolment in Australia.

        (i)   Describe the trends shown in **both** diagrams.   **3**

        (ii)   The data in Diagram 5 is presented in a table. Discuss an alternative technique that could be used to present the data. You may wish to consider a graphical or statistical technique.   **3**

[END OF QUESTION PAPER]