**Questions**

**Q1.**

**Answer the questions with a cross in the boxes you think are correct . If you change your mind about an answer, put a line through the box  and then mark your new answer with a cross .**

A sundial in the United Kingdom shows 11:15 am on a day when the Equation of Time is -6 minutes.

The sundial's longitude is 3° W.

These observations mean that:

(i)  A clock at the sundial's location would show:

**(1)**

   **A**    11:15

   **B**    11:21

   **C**    11:27

   **D**    11:33

(ii)  Greenwich Mean Time is:

**(1)**

   **A**    11:15

   **B**    11:21

   **C**    11:27

   **D**    11:33

(iii)  The Local Mean Time at the sundial's location is:

**(1)**

   **A**    11:15

   **B**    11:21

   **C**    11:27

   **D**    11:33

(iv)  The Apparent Solar Time at the sundial's location is:

**(1)**

   **A**    11:15

   **B**    11:21

   **C**    11:27

   **D**    11:33

**(Total for question = 4 marks)**

**Q2.**

Figure 7 shows a clock and a sundial on a church wall in the UK.



**Figure 7**

The clock is showing a time of 09:10 GMT while the shadow on the sundial indicates a time of 9 am.

(i)  State the Apparent Solar Time when this photograph was taken.

**(1)**

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(ii)  If the Equation of Time on the day when this photograph was taken was –2 minutes, calculate the Mean Solar Time at this location.

Use the equation:

Equation of Time = Apparent Solar Time – Mean Solar Time

**(2)**

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(iii)  Hence show that the longitude of the location where the photograph was taken is 2°W.

**(2)**

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**(Total for question = 5 marks)**