

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:

$$\text{Equation of Time} = \text{Apparent Solar Time} - \text{Mean Solar Time}$$

(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)