

Practice Questions MS - Topic 1: Planet Earth



By Ben Fletcher

Feel free to contact me by my school email if you have any queries or want an explanation of a question. – Ben F :)

1a) 1 mark – Spec 1.1

- B1 for “Oblate Spheroid”
- DO NOT accept “Sphere” or “Spheroid”

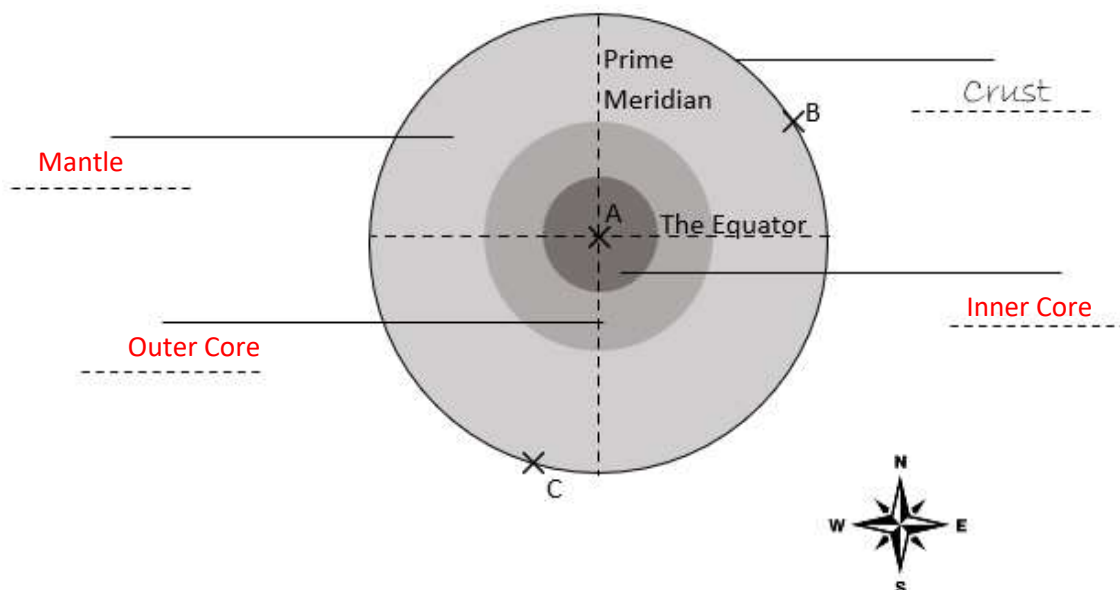
1b) 2 marks – Spec 1.1, 1.2

- A1 for a value in the range $12,256 \leq \text{answer} < 12,756$
- A2 for a value in the range $12,706 \leq \text{answer} < 12,756$

1c) 4 marks – Spec 1.2

- M1 for the calculation of radius = 6500
- M2 for the calculation of radius cubed: 274,625,000,000 oe
- M3 for the multiplication of radius cubed by $\frac{4}{3}\pi \approx 1.15035 \times 10^{12}$
- A1 for the correct conversion to standard form and correct rounding to 3 s.f. = 1.15×10^{12}
- If diameter has been used instead of radius allow marks M2 and M3 if those calculations are done correctly.
- Otherwise, do not allow ECF

2a) 2 marks – Spec 1.3



- B1 for Inner and Outer Core labelled correctly
- B2 for Mantle labelled correctly

2b) 6 marks – Spec 1.4, 1.5

- Point A:
- B1 for a latitude of 0 with correct units (either N or S or neither)
- B2 for a longitude of 0 with correct units (either E or W or neither)
- Point B:
- B3 for a latitude in the range 20° to 40° N
- B4 for a longitude of 90° E
- Point C:
- B5 for a latitude in the range of 65° to 85° S (DO NOT accept -65 to -85 N)
- B6 for a longitude of 90° W
- Accept equivalent longitudes e.g. 90° W and 270° E

3a) 6 marks – Spec 1.4, 1.5

- B1 for 23.5° S
- B2 for 23.5° N
- B3 for 66.5° N
- B4 for 66.5° S
- B5 for 90° N
- B6 for 90° S
- Accept increased accuracy for all and values given in degrees and arc minutes, seconds.

3b) 5 marks – Spec 1.5

- North Pole:
- B1 for Northernmost point or similar
- Tropic of Capricorn:
- B2 for mention of South/Southernmost latitude or similar
- B3 for “where the sun can be directly overhead (at noon)” or similar
- Arctic Circle:
- B4 for mention of South/Southernmost latitude or similar
- B5 for “where the sun doesn’t set for a whole day (24 hours) at summer solstice/in summer” allow similar and converse

4a) 2 marks – Spec 1.6

- B1 for Earths atmosphere scatters blue light more than others
- B2 for “Rayleigh scattering”

4b) 1 mark – Spec 1.6

- B1 for “skyglow”

4c) 1 mark – Spec 1.6

- B1 for “twinkling”