Marks

Question 28 — Geophysics (25 marks)

(a) (i) Describe Earth's current magnetic field. **2**

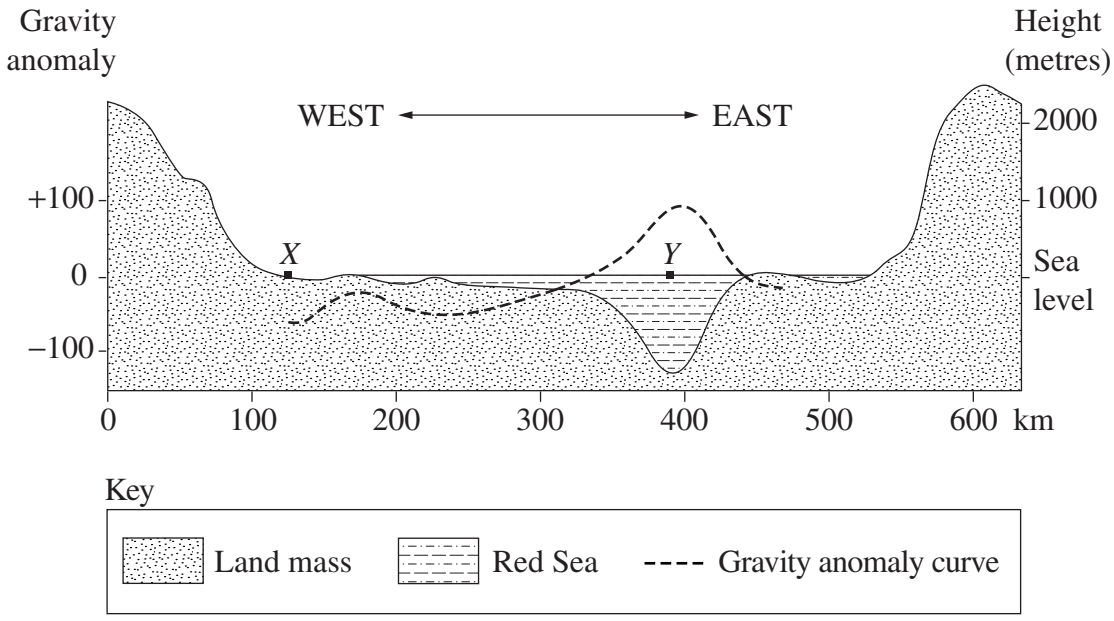
(ii) The diagram represents the magnetic anomalies of the oceanic crust located near the island of Iceland in the mid-Atlantic. **4**

Mid-ocean ridge

Explain the origin of the pattern of magnetic anomalies on either side of the mid-ocean ridge.

(b) (i) Recount the steps involved in gravity data reduction. **2**

(ii) The diagram shows the surface height and gravity anomaly curve in a region near the Red Sea.



(1) Propose reasons for the difference in the gravity anomaly at the locations marked *X* and *Y*. **2**

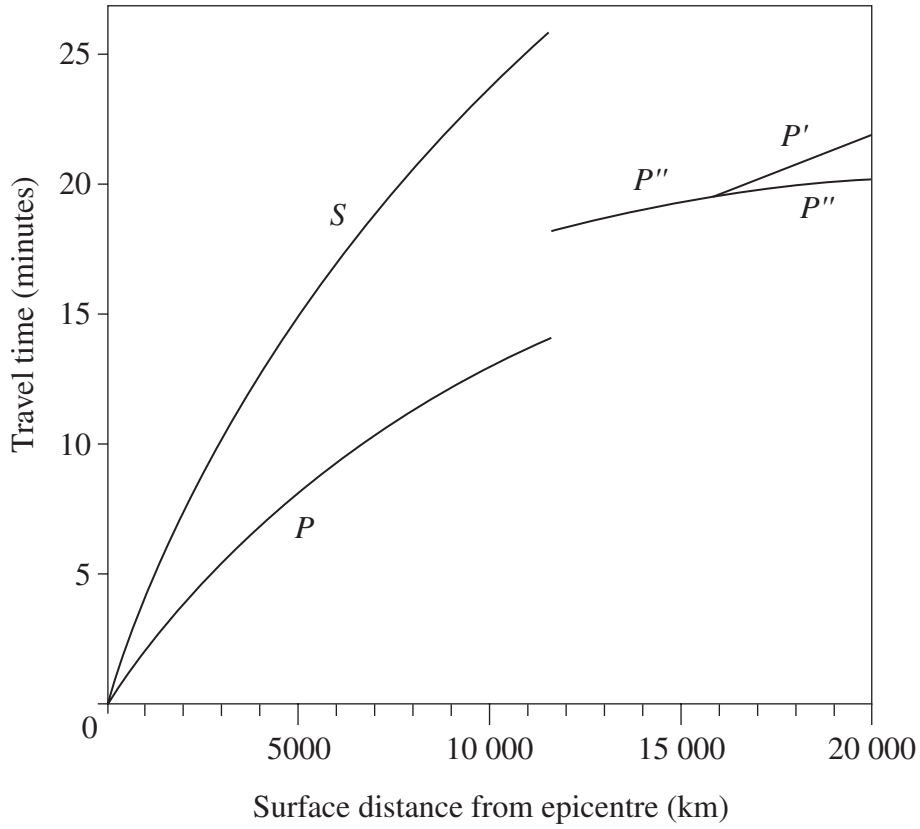
(2) Predict the likely variation in orbital path for a satellite moving from West to East across the region shown in the diagram. **2**

Question 28 continues on page 29

Marks

Question 28 (continued)

(c) The graph shows the travel time for *P* waves and *S* waves at different surface distances from an earthquake epicentre.



(i) Contrast the properties of *P* waves and *S* waves. **2**

(ii) Account for the absence of *S* waves at distances greater than 11 000 km from the earthquake epicentre. **2**

(iii) Identify how this graph supports the existence of a solid inner core of Earth. **2**

(d) Assess the application and advantages of TWO geophysical methods in mineral exploration. **7**

End of Question 28