

3. It is recorded that in a certain month 5·7 inches of rain fell. Find the weight of the rain which has fallen on an acre of land, assuming that a cubic foot of water weighs 1,000oz.

4. State and prove the rule for converting a vulgar fraction to a decimal. How can you tell before trial whether the decimal will terminate or will circulate? Give the reason for your answer.

5. A quartz reef yields ·00203125 per cent. of gold. Find the value of a ton of the quartz, if gold be worth £3 17s. 6d. an ounce, and the refuse quartz be valueless.

6. A square field, containing $22\frac{1}{2}$ acres, has a roadway 6 yards wide running all round it just outside its boundary. Find the cost of making this road at 3s. $2\frac{1}{2}$ d. per square yard.

7. In a game, A can give B 20 points out of 100, and B can give C 30 out of 200. How many can A give C in a game of 350 points?

8. A property-tax of a penny in the pound is levied on the capital value of property. If 7 per cent. be the current rate of interest, find how many pence in the pound would have to be levied on the income of the property to yield the same revenue.

9. The 3-per-cent. Consols being at $103\frac{1}{2}$, a man sells out £10,000 stock, and buys into the New Zealand 4-per-cents, by doing which he increases his annual income by £120. What was the price of the latter stock?

10. If the town population be to the country population at the present time in the ratio of 17 to 5, and if the town population increase at the rate of 12 per cent. whilst the country population increases at the rate of 5 per cent., what is the rate of increase of the total population?

11. Two farmers, who have 2,500 acres and 3,500 acres of land respectively, go into partnership, taking at the same time a third partner, who pays £15,000 into the concern. How must the money be divided between the two original landowners, it being understood that all three are to have equal shares in the land, which is of uniform goodness throughout?

12. Two stations, A and B, are on a line of railway, and are 120 miles apart. A train starts from A at 8.15 a.m., and travels towards B at the rate of 25 miles an hour; another train leaves B at 9.30 a.m., and travels towards A at the rate of 30 miles an hour. At what distance from A will they meet?

13. If standard silver contains 37 parts in 40 of pure silver, and if a pound weight Troy of standard silver is coined into 66 shillings, find how much the real value of a shilling is below its intrinsic value, assuming that pure silver is worth 5s. 4d. an ounce, and that the value of the alloy may be neglected.

14. If the price of diamonds *per grain* is directly proportional to their weight, and if a diamond weighing 5 grains be worth £7 10s., what will be the worth of a diamond weighing 16 grains?

Geography.—For Class D. Time allowed: 3 hours.

[Candidates should answer seven Questions. One should be selected from Section A, and two at least from Section B.]

SECTION A.

1. In what two latitudes is the meridian altitude of the sun $65^{\circ} 15'$ when its declination is $21^{\circ} 55' S$? Explain the process by which you solve the problem.

2. How is it that the moon exercises a greater influence than the sun does in the formation of tides, its actual attraction being so much less than that of the sun?

3. What is the principle of Mercator's projection? What are its special advantages and its characteristic defects?

SECTION B.

4. What are monsoons? How are they accounted for? Why are they so marked in the Indian Ocean?

5. What are the three main types of coral reefs? Explain their peculiarities of form.

6. State the general direction of the great volcanic lines on the earth's surface. What reason can you give for it?

7. Illustrate the influence of the physical features of a country in the formation of national character by reference to Scotland, France, and Greece.

SECTION C.

8. Describe the general configuration of New Zealand, tracing the connection between the physical features of the two Islands. (N.B.—A good sketch-map, showing the mountain-ranges, chief rivers and lakes, will increase the value of the answer.)

9. Name the chief commercial products of Ceylon, India, South Africa, the West African colonies, Queensland, Mauritius, and British Columbia.

10. Describe the course of the Danube or of the Congo, noting the characteristic features of its basin. Illustrate by sketch-map if possible.

11. In the course of a journey across North America from east to west, either by the Central Pacific route or by the St. Lawrence and the Canadian Pacific line, what would be the successive aspects of the country passed through?

12. Where are the following places, and for what are they respectively noted: Granada, Birkenhead, Agra, Heidelberg, Belfast, Milan, Wolverhampton, Buenos Ayres, Greenock, Khartoum, Suva, Mandalay, Valetta, Pittsburg, Port Said, Durban, Herat, Valparaiso, Honolulu, Strasburg?

History.—For Class D. Time allowed: 3 hours.

[All the Questions are to be attempted.]

1. Give a brief outline of the history of the conquest and subjugation of England by the Normans.

2. How did the character of Henry the Eighth influence the course of English politics and religion?