

2.1 Population Distribution

Name: _____ Class: _____ Date: _____ **Total: 10 marks**

KEY WORDS density 人口密度 • physiological 生理密度 • agricultural density 农业密度
• arithmetic 算术密度 • population distribution 人口分布

Objective

Build the skills to answer exam questions on **population distribution** 人口分布 and **density** 人口密度.

You must be able to:

- explain the physical factors that attract people (climate, water, flat land, good soil)
- explain the human factors that attract people (jobs, transport, cities)
- calculate and compare **arithmetic** 算术密度, **physiological** 生理密度, and **agricultural density** 农业密度
- describe where the world's people are concentrated

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Why people cluster

People concentrate where the **physical** environment is welcoming — mild climate, fresh water, flat land, fertile soil — and where **human** factors like jobs and transport exist. Deserts, ice, and high mountains stay empty.

■ Three density measures

Arithmetic density = total people ÷ total land. **Physiological density** = people ÷ *farmable* land. **Agricultural density** = farmers ÷ farmable land.

■ Reading the measures

A high **physiological** density means much pressure on the farmland that exists. A low **agricultural** density suggests efficient, mechanised farming (few farmers feed many).

2 Practice

2.1 State two physical factors that attract dense human settlement. [2]

2.2 Define physiological density. [2]

2.3 A country has 20 million people, 200,000 km² of land, of which 50,000 km² is farmable.

(a) Calculate its arithmetic density. [1]

(b) Calculate its physiological density. [1]

3 Exam-style questions

3.1 The number of people per unit of arable land is the [1]

- **A** arithmetic density
- **B** physiological density
- **C** agricultural density
- **D** population pyramid

3.2 Most of the world's population is concentrated in [1]

- **A** high mountains and deserts
- **B** midlatitude coasts and river valleys
- **C** polar regions
- **D** tropical rainforests only

3.3 Country X has a low agricultural density.

(a) State what agricultural density measures.

[1]

(b) Explain what a low value suggests about its farming.

[1]

Solutions

2.1 any two of: mild/temperate climate, fresh water, flat land, fertile soil, coastal access.

2.2 the number of people per unit of arable/farmable land.

2.3 (a) $20,000,000 \div 200,000 = 100$ people/km². (b) $20,000,000 \div 50,000 = 400$ people/km² of arable land.

3.1 B. people per arable land = physiological density.

3.2 B. people cluster on temperate coasts and fertile river valleys.

3.3 (a) the number of farmers per unit of farmable land. (b) few farmers work the land, suggesting efficient/mechanised, developed farming.