S5 Geography Practice Paper: Plate Movement and Earthquake Energy, Tsunami Speed, River Discharge and Gradient, Weather Data, Population Growth and Density, Urbanisation and Land Use, Farming and Industrial Location (100 marks)

Level: S5 | Subject: Geography | 75 minutes | 100 marks | 24 questions | question paper

Part 1 Plate Movement, Earthquakes and Tsunamis (18 marks)

Study the data and answer the questions.

#	Question	Marks
1	Earthquake A has a Richter magnitude of 5.0 and earthquake B a magnitude of 7.0. If each one-magnitude increase releases about 32 times more energy, how many times more energy does B release than A?	5
2	A station is 120 km from the epicentre. P waves travel at 6.0 km/s and S waves at 3.5 km/s. Find the arrival times of both waves and their time difference (one decimal place).	5
3	A tsunami crosses ocean of mean depth 4 000 m with speed v = sqrt(g x d), g = 9.8 m/s^2. Find the speed (whole m/s) and the time to travel 1 000 km (minutes, one decimal place).	4
4	A plate moves 4.5 cm per year. If two plate boundaries are 1350 km apart, how long does the plate take to cover that distance (million years, one decimal place)?	4

Part 2 River Landforms and Discharge (17 marks)

Study the data and answer the questions.

#	Question	Marks
5	A river channel is 18 m wide, 2.5 m deep on average and flows at 1.4 m/s. Find the cross-sectional area and the discharge.	5
6	A catchment covers 480 km2 with annual rainfall of 2 100 mm; runoff is 35% of rainfall. Find the annual runoff volume (million m3, one decimal place).	4
7	A river falls from 1 200 m to 200 m along an 80 km course. Find the average gradient (m/km and as a percentage).	4
8	At one station discharge rises from 40 m3/s to 100 m3/s and stage from 1.2 m to 2.1 m. Find the percentage increase in discharge and explain what the rising stage shows.	4

Part 3 Weather and Climate Data (17 marks)

Study the data and answer the questions.

#	Question	Marks
9	On a day of 30 C the relative humidity is 75%. Saturation vapour content at 30 C is 30.4 g/m3. Find the absolute humidity (one decimal place).	5
10	A month has 30 days with 240 mm of rain, 12 of them wet. Find the mean daily rainfall and the mean rainfall per wet day.	4
11	A day records a maximum of 32.4 C and a minimum of 24.6 C. Find the daily range (one decimal place) and state how relative humidity usually changes as temperature rises.	4

12	Temperature at the foot is 28.0 C and the summit is 1500 m high. If temperature falls 0.6 C per 100 m, find the summit temperature.	4

Part 4 Population Growth and Density (16 marks)

Study the data and answer the questions.

#	Question	Marks
13	Population rises from 5 200 000 to 5 460 000. Find the growth rate (one decimal place).	4
14	The same place has 5 460 000 people over 1 100 km2. Find the population density (people/km2, whole number).	4
15	Birth rate is 12.5 per 1 000, death rate 7.8 per 1 000 and net migration +2.0 per 1 000. Find the natural increase rate and the total growth rate (per 1 000).	4
16	If population grows 1.4% a year, use the rule of 70 to estimate the doubling time (one decimal place).	4

Part 5 Urbanisation and Land Use (16 marks)

Study the data and answer the questions.

#	Question	Marks
17	A country has 3 480 000 urban residents out of 5 800 000 people. Find the urbanisation rate (one decimal place).	4
18	Its urbanisation rate rose from 45% in 1990 to 60% in 2020. Find the rise over 30 years (percentage points) and the average annual rise.	4
19	A 12 ha urban site is divided into housing 5.4 ha, commercial 1.2 ha, open space 2.4 ha and roads 3.0 ha. Find the share of each use (%).	4
20	An inner-city district falls from 18,000 to 15,300 people/km2. Find the percentage fall (one decimal place) and name the process.	4

Part 6 Farming and Industrial Location (16 marks)

Study the data and answer the questions.

#	Question	Marks
21	A farm of 60 ha yields 4.8 tonnes of rice per hectare sold at $2 300 per tonne. Find total output and total revenue.	4
22	For the same farm, production costs $9 800 per hectare. Find total cost, total profit and profit per hectare.	4
23	Siting a factory near the raw material saves $12,000 a month in inbound freight but adds $4,500 in finished-goods freight. Find the net monthly and annual saving.	4
24	For a factory site, weights are land 30%, labour 25%, transport 20%, market 15% and policy 10%. Site A scores 8, 6, 7, 5, 9 and site B 6, 9, 5, 8, 8 (out of 10). Find both weighted totals and the better site.	4