



GEO.PH17 Earthquake Case Study in a Poorer Country: Nepal, 2015

AQA 8035 · Calculators not allowed · about 60 minutes

Total Marks

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Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Give the date, the nearest named location and the magnitude of the mainshock for the Gorkha earthquake in Nepal.

(Total for Question 1 is 2 marks)

- 2** State the commonly reported death toll from the 2015 Nepal (Gorkha) earthquake.

(Total for Question 2 is 1 mark)

- 3** State one well-known cultural or heritage site in Kathmandu that was damaged in the 2015 Nepal earthquake.

(Total for Question 3 is 1 mark)

- 4** Distinguish between a primary effect and a secondary effect of an earthquake, using the Nepal 2015 case study in your answer.

(Total for Question 4 is 2 marks)

- 5** Give TWO primary effects of the 2015 Nepal earthquake. Give one mark for each correct effect.

(Total for Question 5 is 2 marks)

- 6** Give TWO secondary effects that followed the Nepal earthquake in 2015. Give one mark for each correct effect.

(Total for Question 6 is 2 marks)

- 7** Describe how the pattern of damage differed between rural mountain villages and the urban area of central Kathmandu after the 2015 Nepal earthquake. Use one or two specific details.

(Total for Question 7 is 3 marks)

- 8** The government survey reported 498,852 houses destroyed and 256,697 houses damaged, giving a combined total of 755,549 houses affected. Calculate the percentage of affected houses that were destroyed. Give your answer to one decimal place.

(Total for Question 8 is 2 marks)

- 9** Explain TWO immediate responses to the Nepal earthquake in 2015. Give two developed points.

(Total for Question 9 is 4 marks)

- 10** Explain TWO long-term responses to the 2015 Nepal earthquake and how they attempted to reduce future risk.

(Total for Question 10 is 4 marks)

- 11** Compare the capacity to respond immediately and to recover in the Nepal earthquake (2015) with that of a wealthier-country earthquake case study such as Christchurch, New Zealand (2011). Give up to four marks.

(Total for Question 11 is 4 marks)

- 12** Give ONE physical reason why the Nepal quake triggered many landslides in mountain areas.

(Total for Question 12 is 1 mark)

- 13** Give TWO ways international aid helped Nepal in the weeks after the earthquake. One mark for each correct way.

(Total for Question 13 is 2 marks)

- 14** Suggest TWO reasons why rebuilding in Nepal after the 2015 earthquake was slower than in some wealthier countries. Give one mark for each valid reason.

(Total for Question 14 is 3 marks)

- 15** Use named facts and figures from the Nepal (Gorkha) earthquake, 2015, and from other case study knowledge you have, to answer this question. This question is worth 15 marks: 12 marks for the quality of your assessment and 3 marks for spelling, punctuation, grammar and use of specialist terminology (SPaG).

'Assess the effectiveness of the responses to the Nepal earthquake in 2015.'

Assess the effectiveness of the responses to the Nepal (Gorkha) earthquake, 2015.

(Total for Question 15 is 15 marks)

Mark scheme · GEO.PH17 Earthquake Case Study in a Poorer Country: Nepal, 2015

Question 1

- **B1** date: 25 April 2015, oe
- **B1** location: Gorkha district (epicentre near Gorkha) or reference to central Nepal/Kathmandu region, oe
- **Answer: 25 April 2015; epicentre near Gorkha (central Nepal), magnitude 7.8.**

Question 2

- **B1** 8,964 deaths (or rounded figure close to this total), oe
- **Answer: About 8,964 people were killed.**

Question 3

- **B1** Kathmandu Durbar Square (or reference to specific temples or heritage sites in Durbar Square), oe
- **Answer: Kathmandu Durbar Square.**

Question 4

- **B1** primary effect defined as an immediate result of the earthquake itself, with example such as collapsed buildings or deaths in Nepal, oe
- **B1** secondary effect defined as a later consequence caused by primary damage, with example such as landslides, avalanches or disrupted agriculture/economy in Nepal, oe
- **Answer: A primary effect is an immediate result of the quake, for example collapsed buildings and the nearly 8,964 deaths. A secondary effect is a later consequence caused by that damage, for example landslides and avalanches, disease risk and disruption to farming and the economy.**

Question 5

- **B1** collapsed homes/buildings (e.g. many houses destroyed), oe
- **B1** deaths/injuries (e.g. about 8,964 deaths), oe
- **Answer: Collapsed buildings/homes; deaths and injuries (about 8,964 deaths).**

Question 6

- **B1** landslides and avalanches (e.g. Everest avalanche), oe
- **B1** disruption to agriculture/economy or increased disease risk due to damaged water/sanitation, oe
- **Answer: Landslides and avalanches (including the Everest avalanche); disruption to agriculture and the economy, and increased disease risk from damaged water and sanitation.**

Question 7

- **B1** rural mountain villages experienced damage from landslides and isolated building collapse, cutting off access, oe
- **B1** central Kathmandu saw widespread collapse of older masonry buildings and damage to heritage sites (e.g. Durbar Square), oe
- **B1** linked detail, e.g. rural areas often faced blocked roads and delayed aid, while urban areas had higher density of damaged buildings, oe
- **Answer: Rural mountain villages suffered landslides and isolated collapses that often cut roads and delayed aid, while central Kathmandu experienced widespread collapse or severe damage to older masonry buildings and loss of heritage sites such as Durbar Square; urban areas had a higher density of damaged buildings.**

Question 8

- **M1** 498,852 / 755,549 seen or equivalent method, oe
- **A1** 66.0% cao
- **Answer: 66.0%.**

Question 9

- **B1** immediate response 1 named, e.g. search-and-rescue teams from other countries arrived, oe
- **B1** linked detail, e.g. teams rescued survivors from rubble and provided specialist equipment and expertise, oe
- **B1** immediate response 2 named, e.g. emergency aid such as food, water, medical supplies and temporary shelter was distributed, oe
- **B1** linked detail, e.g. field hospitals and tents reduced immediate health risks and gave shelter to displaced people, oe
- **Answer: Search-and-rescue teams from countries such as the UK, India and China arrived to rescue survivors from rubble and provide specialist equipment. Emergency aid including food, water, medical supplies and temporary shelters and field hospitals was distributed to reduce immediate health risks and house people made homeless.**

Question 10

- **B1** long-term response 1 named, e.g. government-led rebuilding and retrofitting of houses and infrastructure, oe
- **B1** linked detail, e.g. rebuilding with improved seismic-resistant designs and revised building codes to reduce future collapse, oe
- **B1** long-term response 2 named, e.g. international loans and aid programmes and community recovery projects, oe
- **B1** linked detail, e.g. funding aimed to restore schools, roads and livelihoods though progress was slow, which should increase resilience over time, oe
- **Answer: Long-term rebuilding and retrofitting of houses and infrastructure, using improved seismic-resistant designs and revised building regulations to reduce future collapse. International loans, aid programmes and community recovery projects provided funds to restore schools, roads and livelihoods, aiming to increase resilience though implementation was slow.**

Question 11

- **B1** point 1: wealthier country example has stronger infrastructure/insurance and quicker access to funds, e.g. Christchurch had faster mobilisation of local resources and insurance payouts, oe
- **B1** point 2: Nepal had limited government funds and many people remained in temporary shelter for years, oe
- **B1** point 3: wealthier country often enforces and benefits from stricter building codes and better emergency services, reducing long-term disruption, oe
- **B1** point 4: Nepal relied more on international aid and had greater challenges in rural access and slower rebuilding, oe
- **Answer: Christchurch (wealthier country) had quicker local mobilisation, stronger insurance and government funds and stricter building codes that sped recovery. Nepal had limited funds, relied heavily on international aid, experienced slow rebuilding and many people stayed in temporary shelters for years, and faced greater access problems in rural areas.**

Question 12

- **B1** steep slopes in the Himalaya became unstable when shaken, oe
- **Answer: The steep mountain slopes of the Himalaya were shaken and became unstable, causing landslides.**

Question 13

- **B1** provided search-and-rescue teams and specialised equipment, oe
- **B1** supplied emergency food, water, medical aid and temporary shelter, oe
- **Answer: By sending search-and-rescue teams and specialised equipment; and by supplying emergency food, water, medical aid and temporary shelters.**

Question 14

- **B1** limited government funds and reliance on international aid, oe
- **B1** poor accessibility to remote mountain villages, slowing delivery of materials and labour, oe
- **B1** weak insurance uptake among homeowners, meaning less private funding for rebuilding, oe
- **Answer: Limited government funds and heavy reliance on international aid; difficulty accessing remote mountain villages that slowed delivery of materials and labour; and low levels of insurance among homeowners so less private rebuilding finance.**

Question 15

- **Level 1** (1-3): Simple statements about responses with little or no use of named facts or case detail. Limited judgement about effectiveness.
- **Level 2** (4-6): A clear assessment that uses some named facts or examples from Nepal and makes comparative points about strengths and weaknesses of responses, but with limited depth or balance.
- **Level 3** (7-9): A detailed, balanced assessment using accurate named facts and figures from Nepal (and where relevant another case study), weighing immediate and long-term responses, considering constraints and reaching a justified judgement about overall effectiveness.
- **Level 4** (10-12): A comprehensive, well-balanced assessment that uses detailed named evidence and figures from Nepal and other cases, evaluates both short-term and long-term responses against clear criteria (speed, coverage, sustainability), considers limitations such as funding, access and governance, and reaches a well-supported, nuanced conclusion.
- **Indicative content:**
 - Immediate responses: international search-and-rescue teams from countries such as India, China and the UK, field hospitals, delivery of emergency food, water and shelter; these reduced immediate mortality and provided lifesaving medical care.
 - Use named figures: around 8,964 deaths; large numbers of houses destroyed (498,852) and damaged (256,697) show scale that responders had to address.
 - Strengths of immediate response: international assistance supplied specialist rescue skills and rapid emergency supplies; local volunteers and NGOs mobilised quickly.
 - Weaknesses of immediate response: damaged roads and landslides slowed delivery to remote mountain villages; some communities waited longer for aid.
 - Long-term responses: government-led reconstruction plans, revised building regulations and attempts to retrofit buildings; international funding and loans aimed at rebuilding schools, hospitals and infrastructure.
 - Limitations of long-term response: limited government funds, slow disbursement of international aid, low insurance coverage and logistical challenges meant many people remained in temporary shelter for years, reducing effectiveness of recovery.
 - Comparison with wealthier-case examples: Christchurch showed faster access to funds, higher insurance cover and stronger pre-existing building standards, highlighting Nepal's constraints in capacity and finance.
 - Considerations of sustainability: rebuilding with seismic-resistant design would be effective long-term, but effectiveness depends on enforcement, funding and reaching rural areas.
 - Conclude with a judgement that balances saved lives and immediate relief against slow, uneven long-term recovery; state whether overall responses were effective given Nepal's economic constraints and the earthquake's scale.