

PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION FORM FIVE TERMINAL EXAMS GEOGRAPHY 1 – ANSWER KEY / MARKING SCHEME

SECTION A (20 MARKS)

Answer all questions in this section.

1. Define the following geographical concepts:

(4 × 2 = 8 marks)

a) Systems theory in Geography

A concept which views the Earth and its environment as a set of interrelated components that function together as a system. It emphasizes the flow of energy and matter between subsystems such as the atmosphere, lithosphere, hydrosphere, and biosphere.

→ *(2 marks)*

b) Geographical determinism

A theory that suggests that human activities, culture, and development are strongly influenced or determined by the physical environment, particularly climate and terrain.

→ *(2 marks)*

c) Chain surveying

A land surveying technique used to measure linear distances on the ground using a chain or tape

to establish boundaries, plot small areas, or create base maps.

→ (2 marks)

d) Research hypothesis

A tentative or testable statement predicting the relationship between two or more variables in a geographical study.

→ (2 marks)

2. Give five (5) reasons why research is considered essential in modern geographical studies.

(5 × 2 = 10 marks)

1. **Provides solutions to geographical problems** – Research helps to address issues such as land degradation, urban congestion, and resource management.
2. **Improves policy and planning** – Findings guide governments in making evidence-based spatial and environmental decisions.
3. **Expands geographical knowledge** – Research leads to new discoveries, theories, and conceptual developments.
4. **Promotes sustainable development** – By studying environmental systems, research aids in maintaining ecological balance.
5. **Enhances technological application** – Research introduces modern tools like GIS, GPS, and remote sensing for better spatial analysis.

(Award 2 marks each for relevant, well-explained points.)

SECTION B (40 MARKS)

Answer any two (2) questions from this section.

3. Examine six (6) major contributions of modern geographical theories in understanding the interaction between the physical and human environment.

(6 × 6⅔ = 40 marks)

Expected points:

1. **Systems theory** – Shows how physical and human systems interact dynamically through energy and material exchanges.
2. **Human–environment interaction models** – Explain feedback relationships between people and nature (e.g., ecosystem approach).
3. **Spatial analysis theory** – Helps understand spatial organization, distribution of activities, and resource allocation.
4. **Behavioral geography** – Explains human decision-making in spatial context and environmental perception.
5. **Sustainability theory** – Encourages balancing resource use with environmental conservation.
6. **Location theory** – Explains why economic and social activities occur in specific areas based on costs, accessibility, and resource distribution.

(Each point with clear explanation – 6⅔ marks each; total 40 marks.)

4. Discuss six (6) key principles of systems theory and explain how they are applied in analyzing environmental processes.

(6 × 6⅔ = 40 marks)

Expected principles and applications:

1. **Input and Output Principle** – Energy, matter, and information enter (inputs) and leave (outputs) the system, as in the water cycle.
2. **Interaction Principle** – Components influence one another (e.g., vegetation affects climate and soil).
3. **Equilibrium Principle** – Systems tend to maintain balance through feedback mechanisms (e.g., homeostasis in ecosystems).
4. **Feedback Principle** – Positive and negative feedbacks regulate environmental stability (e.g., global warming feedback loops).
5. **Hierarchy Principle** – Systems exist within larger systems (e.g., a river system within a drainage basin).
6. **Dynamic Change Principle** – Systems evolve over time due to natural or human-induced forces (e.g., climate change adaptation).

(Each principle identified and applied = 6⅔ marks.)

5. Evaluate the relevance of advanced geographical concepts such as location, distance, scale, and spatial interaction in contemporary planning and development activities.

(6 × 6⅔ = 40 marks)

Expected points:

1. **Location** – Determines optimal placement of infrastructure, industries, and settlements.
2. **Distance** – Influences transportation planning, market accessibility, and service delivery.
3. **Scale** – Helps planners interpret spatial data appropriately (local, regional, or national level).
4. **Spatial interaction** – Explains movement of people, goods, and information essential in urban planning.
5. **Accessibility** – Guides the distribution of public facilities like hospitals and schools.
6. **Spatial patterns and networks** – Used to model urban growth and land use changes.

(Each point discussed and contextualized = $6\frac{2}{3}$ marks.)

SECTION C (40 MARKS)

Answer any two (2) questions from this section.

6. With the aid of well-labelled diagrams, describe the steps followed in conducting a chain survey on a given piece of land.

(5 major steps $\times$ 8 marks = 40 marks)

Expected steps:

1. **Reconnaissance (Preliminary inspection)** – Visiting the area to identify key features, obstacles, and determine survey stations.
2. **Station marking and baseline establishment** – Selecting and marking main and subsidiary stations; laying a baseline as reference.
3. **Measurement of lines and offsets** – Using a chain/tape to measure linear distances and perpendicular offsets for detail points.
4. **Recording field data** – Entering readings and sketches in a field book.
5. **Plotting and checking** – Drawing the map to scale on paper, plotting measurements, and cross-checking for closure errors.

(Award marks for labelled diagram showing baseline, offsets, stations, and features – up to 8 marks.)

7. “Technological advancement has greatly improved the accuracy of land surveying.” Discuss six (6) ways in which modern surveying equipment and techniques have enhanced data collection and mapping accuracy.

(6 × 6⅔ = 40 marks)

Expected points:

1. **Use of Total Stations** – Combines distance and angle measurement digitally for high precision.
2. **Global Positioning System (GPS)** – Provides accurate global coordinates quickly.
3. **Remote Sensing** – Captures spatial data over large areas using satellites or drones.
4. **Geographic Information Systems (GIS)** – Integrates, stores, and analyzes spatial data effectively.
5. **Electronic Distance Measurement (EDM)** – Allows rapid and precise measurement of long distances.
6. **Digital Data Recording and Processing** – Reduces human error and speeds up map production.

(Each point well explained = 6⅔ marks.)

8. Explain six (6) stages of conducting a geographical research project, clearly showing what activities are done at each stage.

(6 × 6⅔ = 40 marks)

Expected stages:

1. **Problem Identification** – Recognizing and defining a geographical issue or gap in knowledge.

2. **Literature Review** – Reading existing works to understand what has been done and refine objectives.
3. **Formulation of Objectives and Hypothesis** – Setting clear research goals and testable statements.
4. **Data Collection** – Gathering primary (fieldwork, observation, interviews) and secondary (documents, maps) data.
5. **Data Analysis and Interpretation** – Using statistical or spatial tools to process and explain findings.
6. **Report Writing and Presentation** – Compiling findings, conclusions, and recommendations for users or policymakers.

(Each stage properly described = 6 $\frac{2}{3}$ marks.)

 Total Marks: 100

- **Section A:** 20 marks
- **Section B:** 40 marks
- **Section C:** 40 marks