

**2024 - Physical Geography - O Level - Senior 3 S3****Past Paper ANSWERS****I. SECTION A (55 MARKS)****1. Map Scales**

- a) Ratio scale
  - b) Statement scale
  - c) Linear scale
- 

**2. Jovian Planets**

- a) Jupiter, Saturn, Uranus and Neptune
- 

**3. Physical Features**

- d) Stadiums (not a natural relief feature)
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**4. Danger of Global Warming for Coastal Areas**

- c) Rising of sea level and floods
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**5. Major Types of Vegetation in Africa (except)**

- c) Forest vegetation

*(This is a general category, not a specific type like the others.)*

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**6. Ozone Layer and Atmosphere**

- i) c) Stratosphere

- ii) b) It filters the sun's insolation by removing dangerous rays
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**7. Impact of Relief Features**

- a) Settlement

- Flat lowlands attract settlements.
-

- Mountains discourage dense settlements due to steep slopes.
- Valleys can attract settlements for water and fertile soils.

**b) Agriculture**

- Fertile plains favor farming.
- Steep slopes reduce mechanized farming.
- Highlands suitable for tea and coffee, valleys for rice.

**8. Factors Influencing Vegetation**

**a) Relief**

- High altitude: cold, less vegetation.
- Lowlands: warm, thick vegetation.
- Slopes affect drainage and soil depth.

**b) Human Activities**

- Deforestation reduces vegetation cover.
- Afforestation increases vegetation.
- Farming clears natural vegetation.

**9. River Profile Features**

**Youthful Stage      Old Stage**

Waterfall              Meanders

Rapids                Oxbow lake

V-shaped valley U-shaped valley

**10. Vegetation and Weathering**

- ✓ ☐ a) Protects rocks from exposure.
- ✓ ☐ b) Organic acids chemically weather rocks.
- ✓ ☐ e) Plant roots break rocks physically.

### 11. Longitude of City A

**d) 90° E**

Explanation: 2-hour difference = 30° → 300E + 60° = 90° E

### 12. Climate Data

**a) ii) 2168 mm**

(sum of rainfall figures)

**b) i) 1.2°C**

(max temp - min temp = 27.8 - 26.6)

**c) iii) 27.18°C**

(sum of monthly temps ÷ 12)

### 13. Water Cycle Diagram

**A: Evaporation**

**B: Condensation**

**C: Precipitation**

**D: Runoff**

**E: Infiltration**

**F: Transpiration**

## II. SECTION B (30 MARKS) — CHOOSE ANY 2

### 14. Soil Erosion Control Plan

- Terracing
- Contour ploughing
- Agroforestry
- Cover crops
- Check dams
- Gabions
- Avoid deforestation
- Proper drainage systems

## 15. Economic & Environmental Benefits of Soil Conservation in Rwanda

Economic:

- Increases crop yields
- Reduces costs from soil degradation
- Supports sustainable farming

Environmental:

- Preserves biodiversity
- Reduces siltation in rivers
- Maintains fertile soils
- Prevents land degradation

## 16. Igneous vs Sedimentary Rocks

| Igneous Rocks                   | Sedimentary Rocks                 |
|---------------------------------|-----------------------------------|
| Formed by cooling of magma/lava | Formed by deposition of sediments |
| May have crystals               | Often layered                     |
| Hard, resistant                 | Often softer                      |
| Example: Basalt, Granite        | Example: Sandstone, Limestone     |

## 17. REMA — Rwanda Environmental Problems

a)

- Deforestation
- Soil erosion
- Water pollution

b)

- Reforestation
- Environmental education
- Enforcing environmental laws
- Sustainable farming techniques
- Riverbank protection
- Industrial waste regulation

**III. SECTION C (15 MARKS) — PHOTOGRAPHIC INTERPRETATION****18. Photo Interpretation**

a)

- A: Wildlife conservation
- B: Fishing
- C: Mining
- D: Volcanic eruption
- E: Farming
- F: Deforestation

b)

- Soil erosion
- Loss of biodiversity

c)

- **Mountain Gorilla**

d)

- **Musanze District, Volcanoes National Park**

e)

- **Volcanic cones**
- **Lava plateau**

**END**