

**UNIVERSITY OF COLOMBO, SRI LANKA**  
**FACULTY OF ARTS FOURTH YEAR END EXAMINATION IN ARTS (ONLINE)**  
**SEMESTER I – 2020/2021**

**GYG 4182 – APPLIED BIOGEOGRAPHY**

**Instructions to Students:**

- The question paper starts on page 2.
- All written assessments must be **handwritten**. Handwriting must be **clear and readable**.
- Answers should be written on an **A4 size paper** (ruled/lined paper/or otherwise), using a **black ball point pen**.
- The **index number must be written on the top right-hand side** of each page of the answer script. Do not write your name anywhere on the answer script.
- **Number the pages** of the answer script using the following format at the **bottom of the page**: e.g., if it consists of 5 pages 1/5, 2/5, ...etc.
- Use the **common front page** (provided on LMS) as the first page of the answer script. You may print, or hand write the front page which **must** be the first page of your assessment.
- The **total number of pages** should be indicated on the front page of the answer script.
- **Scan/take photos of the answer script and convert it to a single PDF file** in the order of the page numbers.
- The full page of the answer script must be properly covered inside the scanned image, and the scanned image must be clear/readable.
- LMS does not permit individual pages to be uploaded separately.
- **The only acceptable file format is PDF. The PDF file should be named with your index number**, e.g. A 12345
- Uploading answer scripts as JPEG/JPG or any other form **will not** be permitted.
- Complete and upload the final version of the answer script to LMS **within the stipulated 5 hours**.
- Once the answer script is uploaded to LMS, take **a screenshot of the full page** of the LMS with the word **‘submitted’**, as an acknowledgement and keep it with you.
- **If** there is an **unexpected technical issue** with the uploading of an answer script to LMS, you may send your answer script via email to [exam4@arts.cmb.ac.lk](mailto:exam4@arts.cmb.ac.lk) immediately.

UNIVERSITY OF COLOMBO, SRI LANKA

FACULTY OF ARTS

FOURTH YEAR EXAMINATION IN ARTS (ONLINE)

SEMESTER I – 2020/2021

**GYG 4182 – Applied Biogeography**

Duration: **5 hours** for completion and submission of answer scripts to LMS.

Answer **three (03)** questions selecting at least **one (01)** from each part.

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**Part I**

01. i) “Historical Biogeography aims to study only the distribution patterns of the species in larger spatial scales in the history”. Do you agree with this idea? Discuss your answer citing suitable examples.

(08 Marks)

ii) Using appropriate examples, explain the importance of modern geographical techniques and knowledge of statistics for ecological biogeographical studies.

(12 Marks)

(Total 20 Marks)

02. i) “Loss of habitats is one of the main threats to biodiversity in the world”. Citing suitable examples from Sri Lanka, justify the above statement.

(08 Marks)

ii) Using appropriate examples explain how the knowledge of conservation biogeography helps in “*In situ*” and “*Ex situ*” conservations of biodiversity.

(12 Marks)

(Total 20 Marks)

03. i) Explain the weaknesses of the concept of “biodiversity hotspots”.

(08 Marks)

ii) Select one biodiversity hotspot and discuss the importance of DPSIR framework in studying the origin and consequences of environmental problems in biodiversity hotspots.

(12 Marks)

(Total 20 Marks)

## Part II

04. i) Presume that you are supposed to conduct a vegetation survey of vascular plants above 15 cm of Girth at Breast Height (GBH) in a forest reserve, considering the land use and land cover heterogeneity in different elevations to assess the diversity and abundance of vegetation. Answer the following questions.
- Set **three** objectives for the vegetation survey.
  - Imagine a study area considering above requirements and prepare a sketch of a base map.
  - Propose 10 suitable variables for the survey to collect data considering your objectives of the study.
  - Propose data collection methods for 20 samples for the vegetation survey.

(2 X4 = 08 Marks)

- ii) Propose data analysis methods considering the following requirements and provide the reasons for your selections.
- Diversity of vegetation
  - Abundance of vegetation
  - Analysis methods to classify the spatial differences of vegetation in the study area considering the relationships of variables.
  - An appropriate method to map the spatial differences of above 4. ii c classification.

(3 x 4= 12 Marks)

(Total 20 Marks)

05. i) The concept of “Ecosystem Services” provides an economical view to natural resources”. Critically examine this idea.

(08 Marks)

- ii) Discuss the potentials of the approach of “Payment of Ecosystem Services -PES)” in encouraging the rural communities to protect the surrounding natural environment while receiving the benefits of ecosystem services.

(12 Marks)

(Total 20 Marks)

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