

SECTION A [50 MARKS]
ANSWER ALL QUESTIONS

Question 1

a) **Direction: For multiple choice questions, there are four alternatives: A, B, C, and D. Choose the correct alternative and circle it. Do not circle more than ONE alternative. If there is more than one choice circled, NO score will be awarded.** [10]

i. The Plate Tectonic Theory was propounded by

A Tuzo Wilson.
B Alfred Wegner.
C Georges Lemaitre.
D Pierre- Simon Laplace.

ii. The process of depositing eroded materials in the low lands is known as

A attrition.
B abrasion.
C degradation.
D aggradation.

iii. A foreigner wants to carry out research on Cordyceps. He approached Dorji, a tourist guide, for information. In which climatic zone should Dorji recommend the tourist to visit?

A Alpine Zone
B Temperate Zone
C Sub Alpine Zone
D Sub Tropical Zone

iv. Hot springs have several therapeutic benefits, since they are reported to cure many diseases when people bathe in it.
Under which ecosystem do hot springs fall?

A Forest Ecosystem
B Aquatic Ecosystem
C Grassland Ecosystem
D Agricultural Ecosystem

v. COVID-19 pandemic affected industries all over the world, including Bhutan's.
Which sector of the industry was severely affected?

A Primary
B Secondary
C Tertiary
D Quaternary

vi. If the death rate and birth rate for the year 2019 was 2 %, what would happen to the population of the country?

1. Population will increase
2. Population will decrease
3. Population will remain constant

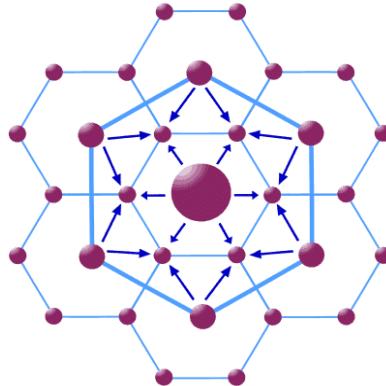
A 1 and 2

B 2 and 3

C Only 3

D 1, 2 and 3

vii. Study the figure given below and identify the principle of central place theory illustrated by the figure.



A Transport Principle ($K = 4$)

B Marketing Principle ($K = 3$)

C Hinterland Principle ($K = 6$)

D Administrative Principle ($K = 7$)

viii. Sonam, a class 12 graduate wants to start an agro-based industry in her community. What are the primary resources that she needs to consider to set up the industry?

1. Raw materials
2. Labour
3. Market
4. Capital

A 1 and 3

B 1 and 2

C 1, 2 and 4

D 1, 2,3 and 4

ix. The mineral is metallic, precious, rare and expensive.

The statement given above best describes the mineral

A gold.

B copper.

C diamond.

D quartzite.

x. Which one of the following is the most widely accepted theory of the origin of the universe?

A Big Bang Theory
 B Steady State Theory
 C Solar Nebula Theory
 D Electromagnetic Theory

b) **Direction: Match each item under Column A with the item in Column B. Write the correct matching pairs in the space provided below.** [5]

Column A	Column B
i. When plates move away from one another	a. Alfred Wagner
ii. The growth of prehistoric mammals	b. Lower Cretaceous Epoch
iii. When plates collide towards each other	c. Convergent movement
iv. Scientific theory explaining the drifting of continents	d. Paleocene Epoch
v. Evolution of dinosaurs	e. Tuzo Wilson
	f. Miocene Epoch
	g. Divergent movement

i.	
ii.	
iii.	
iv.	
v.	

c) **Direction: Write TRUE or FALSE for the following statements in the space provided.** [5]

i. Gypsum is found in Khothakpa in Pema Gatshel Dzongkhag. (_____)	
ii. The formation of the cirque is due to the depositional work of a glacier. (_____)	
iii. Emigration is the process to leave one's country or region to settle in another. (_____)	
iv. All settlements provide a similar range of goods and services. (_____)	
v. Bhutan lies in a seismically active zone. (_____)	

d) **Direction: Fill in the blanks with appropriate words.**

[5]

i. Typical karst landforms are seen in the regions having a large amount of _____ in the ground water.	
ii. The temperature decreases with an increase in altitude at the rate of 1 degree Celsius for every _____ meters.	
iii. The factors that attract an individual or group to leave their home for better economic opportunities and better life is known as _____.	
iv. A form of farming in which crops or animals are grown or reared for sale to earn money is known as _____.	
v. Industry that provides services related to knowledge and information through consultancy, financial planning, designing, information technologies, research development is called _____.	

e) **Direction: Study the extracted map of Samtse, No.78F/1 and answer the following questions.**

i. Give **TWO** importance of a topographic map.

[2]

ii. Mention any **TWO** methods to express scale.

[1]

iii. Define contour.

[1]

iv. Circle the correct sequence of directions to travel from Nimalung to Raigoan. [1]

A Southwest→South→Southeast
B Northwest→North→Northeast
C Northeast→ North→ Northwest
D Southeast → South→ Southwest

v. Study the grids 5070 and 2080 and describe the drainage patterns formed by the main river and its tributaries. [2]

vi. The population distribution is uneven in the given topographic map. Suggest **TWO** [2] ways to space it evenly.

vii. Study the area in grid 8080. Is the establishment of a large-scale agro-based industry [2]
feasible in it? Support your answer with **TWO** reasons.

viii. Convert $2 \text{ cm} = 5 \text{ km}$ to Representative Fraction (RF). [2]

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ix. Name the primary source of income of the people living in Bakshe. Give **ONE** reason why it might be so. [2]

f) **In the outline map of Asia provided:** [3]

- Shade and name the river Tigris and Lena.
- Mark (ΛΛΛ) and name the mountain ranges Kunlun and Armenian knots.
- Shade and name Arabian Sea and Caspian Sea.

g) **In the outline map of South Asia provided:** [3]

- Mark with a thick dot (•) and name Karachi and Colombo.
- Mark (ΛΛΛ) and name the Western Ghats and Himalayas.
- Mark (×××) and name Bolan and Thar Desert.

h) **In the outline map of Bhutan provided:** [4]

- Mark with ()[] and name Thrumshing La and Mon La Karchung.
- Shade and name the rivers Punatshang Chhu and Ngyera Ama Chhu.
- Mark with (ΛΛΛ) and name Jichu Drakey and Masang Gang.
- Mark with a dot (•) and name Phobjikha and Dungkhar.

SECTION B [50 MARKS]
ATTEMPT ANY FIVE QUESTIONS

Question 2

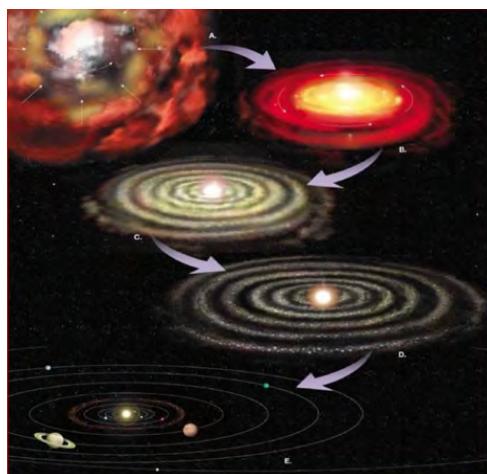


Figure A

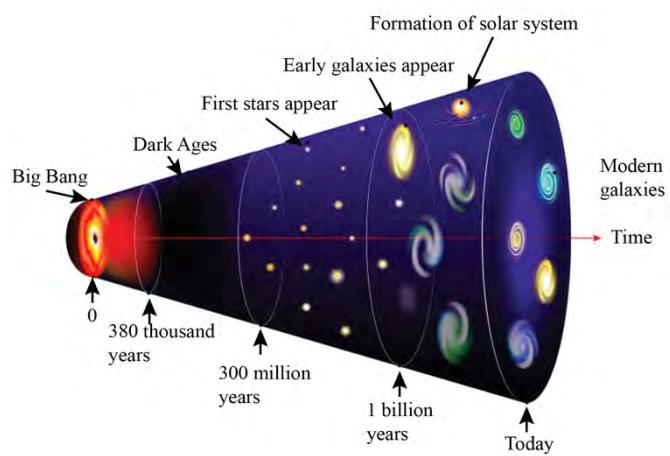


Figure B

a) Study the figures given above and differentiate between A and B with **FOUR** points each.

Figure A	Figure B	

b) The continental drift theory explains the change in location and position of the continents and oceans. Support the statement with **TWO** reasons. [2]

c) If you were the Prime Minister of Bhutan, what **FOUR** measures would you take to encourage people to settle in high altitude areas so that there is equal distribution of population. [2]

d) One of the assumptions of the central place theory is “all consumers have similar purchasing power with the similar taste or demand for the goods and services”. [2]

Is this assumption applicable to Bhutanese society? Justify with any **TWO** reasons.

Question 3

a) People living in Samdrup Jongkhar town received information about the third lockdown through BBS at 6 P.M. on 12th June 2021. At what time would the people living at a place 15° West receive the message? [2]

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The image is to be used for question b.

[2]



b) Identify the agent responsible for the formation of such landforms. Briefly explain how it is formed.

c) Explain any **TWO** challenges faced by agro-based industries in Bhutan.

[2]

d) Landslide is one of the common hazards in Bhutan. On 16th June 2021 a landslide claimed the lives of ten Cordyceps collectors after their temporary camp at Ri-Drupzhi between Laya and Lingzhi was washed away.

[3]

How can such disasters be mitigated? Suggest any **THREE** measures.

e) Write any **TWO** uses of energy minerals.

[1]

Question 4

a) Mention any **TWO** differences between parallels of latitude and meridians of longitude.

[2]

b) You would like to settle in one of the climatic zones in Bhutan. Which zone would you choose and why? Support your choice with **TWO** points.

[2]

c) Imagine you are a business analyst and an advisor to Mr Simon, an American entrepreneur planning to establish an industry in Gasa. What **FOUR** factors would you ask him to consider before setting up the industry in Gasa? [2]

d) Do you think Bhutan should promote mineral-based industries? Justify your answer with **THREE** reasons. [3]

e) What is Geological Time Scale? [1]

Question 5

a) The 2021 Tokyo Olympics opening ceremony took place on Friday 23rd July at 7:30 A.M. at Tokyo (140°E). The program was live broadcasted on Tokyo Broadcasting System. At what time did the people in Bhutan watch the live broadcast? [2]

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b) Explain with **TWO** points how climate influences the life of people? [2]

c) Biodiversity is indispensable for human existence and also plays a significant role in mitigating and adapting the impact of climate change. Evaluate any **THREE** importance of biodiversity to human beings. [3]

d) 'Tertiary sector industry plays a significant role in the development of Bhutanese economy'. Justify the statement with any **THREE** reasons. [3]

Question 6

a) Calculate the longitude of a place X where the time is 4:00 P.M. when it is 11:00 P.M. in Bhutan. [2]

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b) Bhutan is enlisted as one of the top ten global hotspots of biodiversity because of the availability of varieties of flora and fauna. Can Bhutan retain its position in the top ten global hotspots with all developmental activities being carried out in various parts of the country? State your view with **TWO** justifications. [2]

Life Expectancy in Bhutan (2016-2020)	
Year	Life expectancy
2020	71.88
2019	71.78
2018	71.46
2017	71.13
2016	70.78

Source: countryeconomy.com

c) The data given above shows that the life expectancy of people in Bhutan has increased since 2016. If such a trend continues after 2020, mention any **TWO** negative consequences that Bhutan might face.

d) Why do farming practices vary in different regions in Bhutan? Give **TWO** reasons. [2]

e) According to the record with the Forest Fire Management, Forest Protection and Enforcement Division, a total of 16,214 acres of state forest reserve was lost in the year 2017-2018 (www.kuenselonline.com). [2]

Suggest any **TWO** measures to prevent forest fires in the country.

Question 7

a) A frigid climate zone is not suitable for living. Give **TWO** reasons to support the statement [2]

b) How does deflation take place in Aeolian erosion? [1]

c) In 1940, a significant modification of Christaller's Central Place Theory was made by August Lösch. Explain any **THREE** modifications made by August Lösch. [3]

d) Distinguish between Agro-based Industry and Mineral-based Industry with **THREE** points. [3]

e) Suggest any **TWO** strategies to reduce flood disasters.

[1]

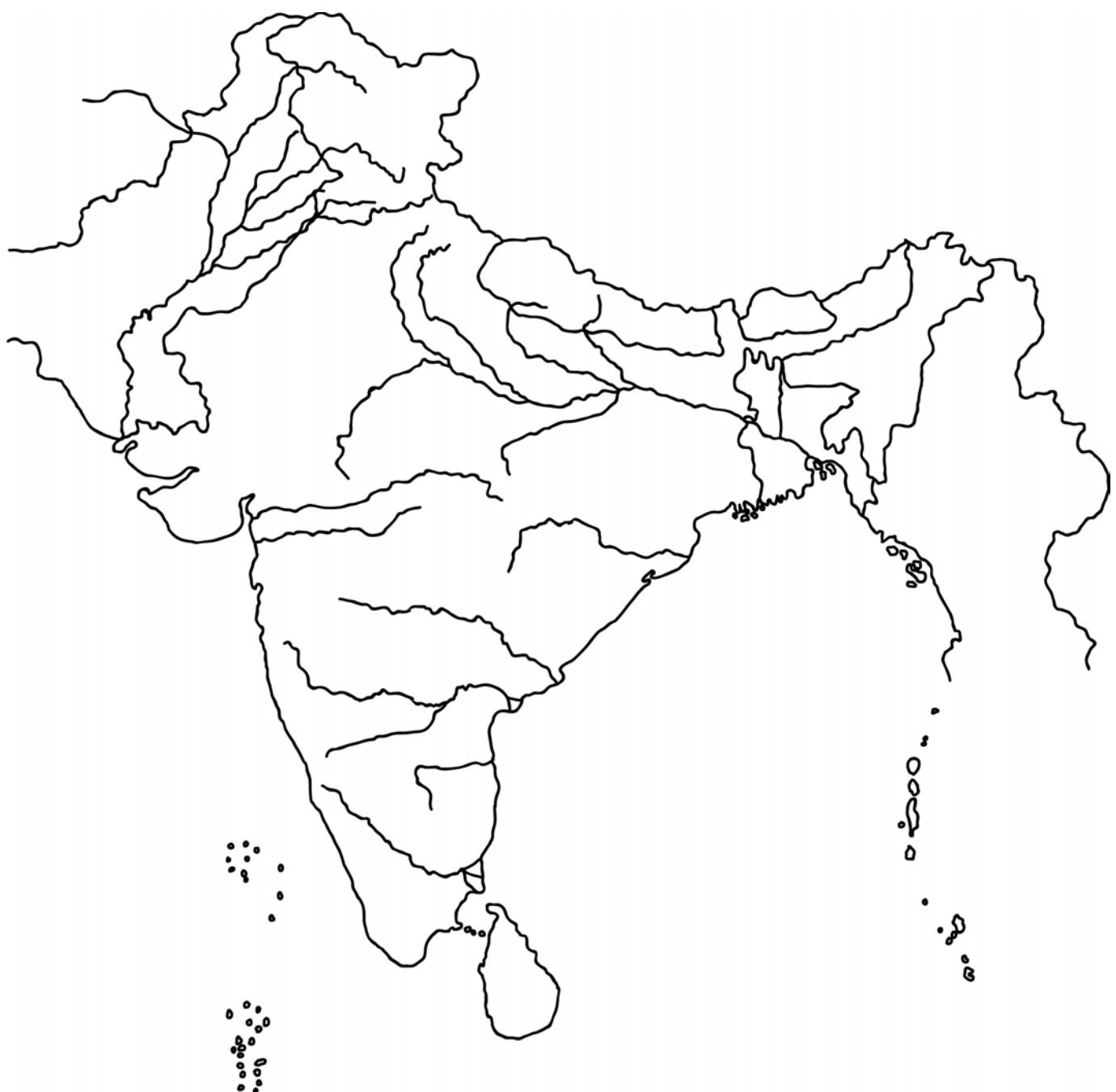
Map of Asia

This map is to be used for Question 1 (f).



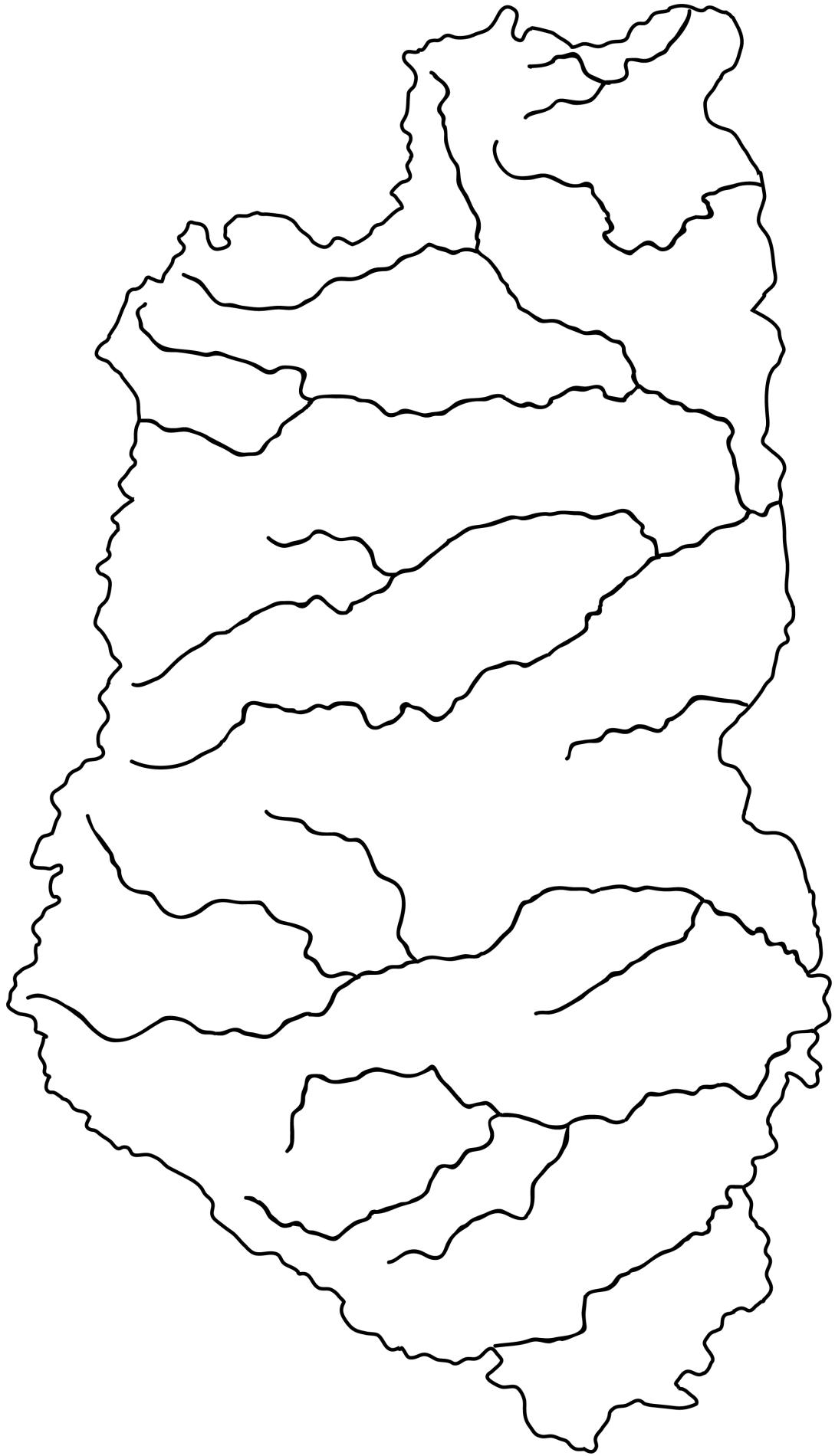
Map of South Asia

This map is to be used for Question 1 (g).



Map of Bhutan

This map is to be used for Question 1 (h).



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