

GEOGRAPHY
(Three hours and a quarter)

(The first 15 minutes of the examination are for reading the paper only. Candidate must NOT start writing during this time).

Answer question 1 (compulsory) from Part I and any SEVEN questions from Part II

PART I [30 marks]
Compulsory

Question 1

- i). Show anticline and syncline with the help of a diagram. (2)
- ii). Which rock type is known as parent rock? Why? (2)
- iii). Give two advantages of remote sensing. (2)
- iv). For a country like Bhutan, the negative impacts of climate change could be severe. Support the statement with two valid points. (2)
- v). Discuss how vegetation helps in weathering. (2)
- vi). What causes ozone layer depletion? Give an example. (2)
- vii). Differentiate between primary and secondary waves with two valid points. (2)
- viii). What is a gorge? (2)
- ix). When the velocity of the wind decreases, it starts to deposit its load. Explain the formation of sand dunes as a depositional feature of wind. (2)
- x). A well gives water only in the rainy season. What kind of a well is that? How can that well be made perennial? (2)
- xi). Define atmosphere in your own words. (2)
- xii). The atmosphere is heated more by terrestrial radiation than by insolation. Explain. (2)
- xiii). The isotherms are more irregular in the Northern Hemisphere than in the Southern Hemisphere. Give one reason. (2)
- xiv). Define isobar. (2)
- xv). Explain in your own words how snowflakes are formed. (2)

PART II [70 marks]
Answer any SEVEN questions

Question 2

- i). Differentiate between sill and dyke with the help of a diagram. (2)
- ii). There is a low pressure belt which extends upto 10°N and S of the equator. (2)
- iii). What could be the possible reasons for the low pressure there? Give four reasons. (4)
- iv). Depending on the nature of the water coming out of the spring, there are different types of spring. Describe three types of spring based on the above factor. (3)
- v). The maximum humus is found in which horizon of soil profile? (1)

Question 3

- i). Differentiate between the following: (2×3)
 - a) Aphan texture crystals and equigranular.
 - b) Rapids and cascades.
 - c) Sandy desert and stony desert.
- ii). Discuss the importance of atmosphere giving four valid points. (4)

Question 4

- i). What do you understand by normal lapse rate? (2)
- ii). Distinguish between weather and climate with four points each. (4)
- iii). Artesian wells occur in regions which fulfill certain conditions. Mention four such conditions. (4)

Question 5

- i). Of the three realms of the earth, which one is the most important? Why? (1+2)
- ii). Distinguish between food chain and food web. (2)
- iii). What is the main source of energy in an ecosystem. (1)
- iv). List down four characteristics of igneous rocks. (4)

Question 6

- i). Briefly explain the three components of ecosystem. (3)
- ii). Draw and explain the pyramid of numbers. (5)
- iii). Mention two advantages of remote sensing. (2)

Question 7

- i). Mention two disadvantages of remote sensing. (2)
- ii). Give two economic importance of metamorphic rocks. (2)
- iii). The continents either rise or sink under the influence of epeirogenetic forces. Name and discuss the two forces. (1+2)
- iv). If you were in the northern hemisphere, which slope would you choose to settle? Why? (2)
- v). Streams in the lower river plain gets divided into a network of channels, forming bars of sand and islands. What is such a stream called? (1)

Question 8

- i). Draw a neat diagram and show the following: (3)
 - a) Fault plane
 - b) Uplifted side
 - c) Downthrown side
- ii). Explain the earth's heat budget with the help of a very clear diagram. (5)
- iii). There is surplus energy upto 38° north and south of the equator. What could be the possible reason for this surplus? (2)

Question 9

- i). Draw the structure of the atmosphere and in about two sentences describe each layer. (5)
- ii). The amount of insolation received in summer and winter is not the same. Do you agree? Give reason to support your answer. (2)
- iii). Discuss the role of bacteria in soil formation. (3)

Question 10

- i). With the help of a diagram explain river meandering and formation of ox bow lake. (5)
- ii). Mention five characteristics of isotherms. (5)

Question 11

The radius of the globe is 5cm. Draw a Polar Zenithal Equidistant Projection for the northern hemisphere placing parallels at 15° and meridians at 30° interval. (10)