

My O-Level Geography Notes (Personalized)

Assalamualaikum, we will first start off with memorisation (Overall topics and notes needed). Later on will be the answering techniques and the different types of questions usually tested. Lastly, there will be the essays which we need to memorise. 😊

GEOGRAPHY IN EVERYDAY LIFE

People and nature are dependent on each other:

People dependent on nature:

- Nature provides essential needs like water and air so that -> humans can survive.
- Living organisms like bees pollinate crops so that -> humans have continuous supply of food.
- Nature **provides space for recreational and leisure activities**
 - allows people to bond with family and friends -> maintains humans' mental and physical well-being
 - Connects ppl with nature and **reduces stress which -> improves physical, psychological and social well-being.**

Nature dependent on people

- People tend to the health of nature and wildlife -> ensuring animals living there thrive
- Community activities promote importance of environmental protection
 - E.g, NParks held a Green Wave Campaign which aims to educate the youth about the importance of environmental protection.

Nature and people mutually affect each other:

- Green spaces and urban wildlife
 - Green spaces help **enhance peoples' mental health and well-being**
 - Green spaces can be a **habitat for urban wildlife, allowing them to exist**
- **Human activities** in nature areas
 - People gain **enjoyment and enhance health and well-being**
 - Enhances biodiversity
 - Enhances **overall health of natural environment due to addition of shelter and habitat for urban wildlife**
- **Nature and People benefit each other**

POSITIVE: - nature areas lower air temperatures, remove pollutants and provide space for recreation

 - **community activities that promote the importance of environmental protection are carried out**
 - E.g, NParks held a Green Wave campaign which aims to educate youth about importance of environmental protection.

NEGATIVE: - wildlife from nearby nature areas may harm people and environmental protection limits development

COMMERCIAL BREAK: What does limiting development mean?

- Residents are afraid development would bring them inconvenience or damage their property and may result in homes being acquired to make way for construction

Anyways last point is this:

- visitors to nature cause soil erosion, damage vegetation, worsen pollution and disturb wildlife

Common Question: Explain why there is an increase in human-wildlife encounters.

- Urban expansion
 - Natural habitats may shrink which causes wildlife to venture out of nature areas into urban districts in search of food and shelter, thus increasing human-wildlife encounters.
- People's growing interest in outdoor recreation
 - Ppl spending more time in nature areas increases likelihood of encountering wildlife.
- Greening efforts by the state
 - Singapore wants to bring back nature into the city which promotes human wildlife encounters

Reasons for human-wildlife conflict:

- Wildlife population increase -> People who may not know how to deal with animals may unintentionally provoke wild animals, leading to attacks.
- Animals may be confused and fearful

- When they venture into unfamiliar urban spaces, it increases the likelihood of attacks when fearful or triggered.

Next part of GIEL: Sense of place

Common question: How do we acquire a sense of place?

- Repeated encounters with objects and people along familiar paths
- Significant and memorable events at local landmarks and gathering places
- Shared experiences
 - Public symbols which reflect a community's response to a tragedy and helps residents preserve memories of loved ones

How is sense of place represented?

- Represented through different forms of media by individuals and organisations

Common question: How do representations of sense of place enhance/contradict one's sense of place?

ENHANCED:

- Sense of place can be enhanced when people respond well to representations that agree with how they feel about certain places.
- Such representations add new layers of meanings to places by revealing interesting information about them

CONTRADICT:

- Others respond defensively to media content that challenges our sense of place
- This causes us to dismiss this media content, perceiving them as distortions and untruths.

Now time for my least favourite part of GIEL: Relationships between locations in neighbourhoods

Firstly, what are regions? - Areas with similar physical or human characteristics

How to classify regions?

- Environmental characteristics: Nature vs built up areas
- Human characteristics: Commercial or residential areas
- Geographical locations: North vs South/ East vs West
- Sphere of influence: Effect on people, causing significant change

Now to the actual important stuff: Spatial Patterns

Spatial patterns refer to the non-random arrangement of services, events and objects.

- Shapes and geometry: Circle line for example
 - Creates more connections, shorten travel time
- Clusters/Concentrations
 - **Allows ppl to travel to destinations efficiently and conveniently**
 - For eg, evenly spread out - increases accessibility and convenience
 - For eg, located near - increases accessibility and convenience

Spatial Associations: The tendency of a pair of services, events or objects to be located near each other.

- E.g, lifts and stairways suggests connections between each other
- Also yet again **accessible and convenient**

Spatial scales: Extent of an area in which a process takes place

- Helps us understand how events and processes at one spatial scale may affect people and nature at other spatial scales

So honestly for this spatial scales thing, you only really need to remember the TOWN PLANNING & Spatial Hierarchies

Spatial Hierarchy: Biggest to smallest btw

Firstly, **TOWN** -> have integrated transport hubs

-> goal is to attract visitors/businesses

Oh oso

-> Large gathering

places where community activities take place regularly

-> Wide range of facilities and features that **enhance residents' convenience** and meet everyday needs

Secondly, **Neighbourhoods**: -> Serves 4000-6000 residents

-> Surrounds the town centre

-> Enables all residents to travel to and from the town centre conveniently

-> Increases **accessibility & convenience**

Thirdly, **Precinct**: -> 400-800 residential units

- >Facilities within **close proximity** - **serve residents' everyday needs**

- Basically meet residents' everyday needs ngl

Lastly, residential unit :/

TOWN PLANNING: Serves residents and provides for nature at precinct, neighbourhood and town levels

- Example: Land mostly used for housing, industrial use and commercial development with some land set aside for roads, schools, parks and other essential facilities
- Facilities - Enable each town to be self-sufficient, provide employment opportunities and often complement each other

Sometimes tested: SYNERGIES

Coordinated land use, different areas connected by transport systems, facilities shared efficiently

Town planning creates synergies across neighbourhoods, precincts and towns.

- Helps achieve sustainability
- By optimising scarce land resources to cater to diverse needs of current and future generations

NEXT CHAPTER: GIEL #2: Sustainability

Honestly, I'm lowkey a lil tired while making this so I might just give half-assed shii LOL

Firstly, what we need to remember throughout both GEOG and SS is SEE>Social, Economic, Environmental.

1. Sustainable development

- meet the needs of the present population by achieving high standards of living for all
- ensure the ability of future generations to meet their own needs

Let's start with ECONOMIC SUSTAINABILITY:

- **Low population density** to support local businesses
 - **Sufficient demand for goods and services**
 - **Residents take up employment -> Increase income and quality of life**
- **Keep transport and infrastructure costs low**
 - **Buildings located closely -> residents need not travel far -> transport costs low**
 - **Transportation infrastructure located close to one another**

How do urban neighbourhoods achieve SOCIAL SUSTAINABILITY:

- **Small population size to facilitate regular interaction between residents**
- **Maintains culture of understanding and open communication**
- **Encourage residents to discuss ways to improve the neighbourhood/ decision-making processes regarding issues affecting their neighbourhood**

How do urban neighbourhoods achieve ENVIRONMENTAL SUSTAINABILITY?

- **Ample protection for nature so that wildlife can thrive**
 - **Human-wildlife coexistence can be fostered**
- **Facilities that supports waste minimisation and recycling**
- **Adopts energy and water-efficient design approaches for buildings and landscapes (prefer this over previous pt)**

USUALLY TESTED: SERVICES IN NEIGHBOURHOODS

- **Provisioning services**
 - provisioning services available in neighbourhoods include **fresh water and food**
- **Regulating services** in neighbourhoods include **microclimate regulation, flood mitigation, air and water quality**
- **Cultural services**
 - cultural services in neighbourhoods include **aesthetics, education and recreation**
- **Supporting services** in neighbourhoods include **soil formation, pollination and photosynthesis**

HAZARDS: (Not Eden Hazard)

1. Fire hazards

a) fires in neighbourhoods are commonly caused by **faulty electrical appliances and wiring, and unattended cooking fires**

b) negative consequences of fires include **burn injuries, smoke inhalation and property damage**

2. Air pollution hazards

a) air pollution in neighbourhoods is commonly caused by **burning vegetation and industrial and motor vehicle emissions**

b) negative consequences of air pollution include **respiratory infections, heart disease and lung cancer**

3. Traffic hazards

a) traffic accidents in neighbourhoods are commonly caused by **speeding, red-light running and drunk driving**

b) negative consequences of traffic accidents include **serious injury and loss of life**

How to build sustainable urban neighbourhoods?

1. Environmental stewardship

- promote **volunteerism among neighbourhood residents to share knowledge with others about the importance of healthy ecosystems**
- **partner public and private stakeholders in environmental stewardship efforts**

2. Disaster risk management

- **reduce neighbourhoods' exposure to hazards and the vulnerability of people and properties to hazards**
- **improve residents' preparedness in responding to hazards and implement monitoring and warning systems**

3. Community resilience

- **strengthen relationships among residents and raise their awareness of potential hazards**
- **develop residents' ability to organise themselves and equip themselves with resources to resist, adapt and recover from a disaster**

FINALLY LAST CHAPTER OF GIEL!

FIELDWORK

Data collection sequence (primary and/or secondary sources)

- Collect quantitative data first → design qualitative data collection to examine patterns/trends
- Collect qualitative data first → design quantitative data collection to verify observations

Limitations and risks

- Adjust research aim, study area, sample size, timeframe according to resources
- Implement safety measures → avoid harm to self, others, and the natural environment

How to collect primary data?

- **Sampling (Can memorise this I think)**
 - Non-probability: convenience, quota sampling
 - Probability: simple random, stratified random sampling
- **Closed-ended questionnaire surveys**
 - Pre-defined responses → short phrases, single words, numbers
 - Rating scales → Likert scale, frequency scale, ranking scale (Can memorise this I think)

- **Mental maps**
 - Visualise experiences by drawing features and adding labels on base map
 - Semi-structured interviews with open-ended questions about features/labels

How to process and analyse data?

- **Closed-ended questionnaire surveys**
 - Measures of frequency → counts, percentages
 - Measures of central tendency → mean, mode, median
 - **Mental maps**
 - Analyse how maps represent reality and how features/labels are drawn
 - Examine how memories are represented on maps and described in interviews
 - **Patterns and relationships**
 - Scatter plots + best-fit lines → correlations
 - Identify geometric shapes, clusters, repetitions
-

How to present findings?

- **Maps**
 - Use dots, lines, polygons for spatial info
 - Include title, date, orientation, scale, legend, author, sources
- **Graphs (Can memorise this I think)**
 - Bar graphs, pie charts → distributions
 - Line graphs → trends and relationships between variables
- **Photographs and texts**
 - Satellite and aerial images for spatial info

- Colour-coded quotations and word clouds for qualitative data

NOW, you're prolly bored af from that sampling bs, so let's put it to use.

COMMON QUESTION: How to sample/collect data?

USE LIST (Location, Instrument, Sample Size, Time)

Location: Locate themselves at the start and end of the trail

Instrument: Look at the sampling notes jn and their benefits

Sample Size: Interview at least 30 people for sufficient data to arrive at a conclusion

Time: Collect data for an hour each time of the day like Morning, Afternoon and Evening (Ensures representation of visitors sampled within a day)

Now back to Sampling:

Simple random sampling is used when **little is known of the studied population**

Stratified random sampling is used when **population clearly includes significantly different subgroups like elderly**

Convenience sampling is used for **convenience and accessibility to researchers**

Quota sampling offers good understanding of population cuz it kinda researches ppl from diff origins so its like nigger and chink

NOW TO MENTAL MAPS

Mental maps are used to capture people's personal insights about different places.

MENTAL MAPS CAN BE DIVIDED INTO TWO: FREE FORM MENTAL MAPS AND BASE MAPS

Advantage: Free form mental maps are more **representative of participants' geographic imagination** of places compared to the use of labelled base maps.

Disadvantage: **Not easily georeferenced**

Now, Base Maps

Advantage: Through open-ended questions, people are allowed to give their **own responses without constraints, allowing them to express themselves fully.**

Disadvantage: **Less representative of participants' geographic imagination of places than Free form mental maps**

NOW IS THE NEXT CHAPTER OF GIEL: Analysis of data

Firstly, we'll talk about average, you know a lot from math, so you already know how to explain mean, median, mode and allat,

BUT NEED TO REMEMBER ADVANTAGE AND DISADVANTAGES.

Mean: Sum of all the values in the data set divided by the number of values in the data set.

ADVANTAGE: It includes every value in the data set and no data is left out to show its central location.

Disadvantage: It is subjected to the influence of outliers, which can affect it, and thus not provide the central location.

Now for the median.

Median: Middle value for a set of data that has been arranged in begins with the smallest value and ending with the largest value ascending order.

Advantage: It is less affected by **outliers**.

Disadvantage: However, it is not as **sensitive as mean in showing the central location** in a data set.

Now for the mode.

Mode: Most frequent value in a data set

Advantage: Useful for categorical data and not showing outliers.

Disadvantage: Not useful for continuous data because there may be two or more values that share the highest frequency.

Now we're actually going back to mental maps for a while.

Common question: Why do you think the mental maps are different?

Model answer: Person drawing map B has a better knowledge of thethan map A. Moreover, person drawing map B is very familiar with the map of Singapore and could remember it well.

**CONGRATULATIONS! YOU MADE IT TO THE
END OF GEOGRAPHY IN EVERYDAY LIFE!**

**Now, we'll pool together possible questions and
model answers for GIEL.**

Using Fig. 1.2, describe the differences between precinct 1 and precinct 2. (3m) Tip: USE HFLG (Housing type/density, Facilities, Layout/Transport, Greenery/Environment)

Model Answer: H: Precinct 1 has fewer but bigger buildings than those in Precinct 2. Moreover, Precinct 1 is more densely built-up while Precinct 2 is more spread out and random. F: Precinct 1 has fewer amenities than precinct 2. Now be specific: Precinct 1 has only one playground and no fitness areas, while Precinct 2 has more than one playground and fitness area.

With reference to Fig. 1.3, explain how this air pollution hazard shown could affect people in this city.

Model answer: Air pollution hazards can gravely affect the health of people living nearby. It can cause lung cancer, heart disease and respiratory infections.

NOW THIS NEXT QUESTION ALWAYS APPEARS SO BE ATTENTIVE!!!

With reference to Table 1.1, evaluate the validity of the students' findings regarding the popularity of the War Memorial Park. [6]

For these validity questions, use LIST (Location, Instrument, Sample size, Time) + Improvements. Moreover, it must have both sides: Valid and not valid. In this case, its a table so theres no location.

Model answer: I: Valid: The findings are valid because the data was collected using mobile phone 'check-ins' that are captured when visitors are physically at the park. [1 mark] Not valid: The findings may not be valid because there are visitors who did not check in using their mobile phones thus the data misrepresent the parks' popularity. These visitors could be either young children or elderly who may not be familiar with using mobile phones to check-in at attractions. (Always elaborate, yap cuz its point marking). T: The findings are valid because the **data collected addresses the investigation question**, highlighting the more popular check-in times. T: On all days when data is available, visitors prefer check-times after 6pm.

Instrument/ General knowledge: The findings may not be valid because visitors might have checked-in but did not really explore the park [1 mark]. This could happen for visitors who had purchase bundled promotions at a flat fee, for example, the London Pass and the Copenhagen Card.

With reference to Fig. 1.1, suggest how nature and residents can negatively affect each other within an urban neighbourhood.

Model answer: Wildlife from nature areas may harm nearby residents and environmental protection limits development. On the other hand, humans may damage vegetation, worsen pollution, disturb wildlife and cause soil erosion.

Suggest how gentrification in Kampung Glam can affect the people's sense of place as shown in Fig. 1.2.

Gentrification in Kampong Glam can affect people's **sense of place** in several ways. Long-term residents like Ms Hidayah may feel that their sense of place is **contradicted**, as the neighbourhood has become "sanitised and commercialised" with restaurants, boutiques, and cafes replacing the residential character they were familiar with. This change disrupts **repeated encounters with familiar objects and people**, and memories associated with old shophouses and local gathering places are diminished, weakening their emotional attachment to the area.

Compare the air pollution levels between 2015 and 2018.
(GSE-General, Specific, Exception)

Model answer: G: The air pollution levels in Mandir Marg steadily decreased from 500 micrograms in 2015 to 350 micrograms in 2018.
S: The air pollution levels in 2016 were the highest for all locations except Mandir Marg. Moreover, the air pollution levels for Rk Puram and Punjabi Bagh were the same in 2017 and 2018.

State one possible reason for the spatial distribution of the areas of study.

The areas of study are near heritage-related monuments and landmarks which increases convenience for students who conduct studies on this heritage. Moreover, the close proximity of these heritage landmarks increases accessibility for those keen to learn about the heritage of these areas.

Explain how community programmes develop community resilience in building sustainable urban neighbourhoods.

For this question, our notes say...

Community resilience

- strengthen relationships among residents and raise their awareness of potential hazards
- develop residents' ability to organise themselves and equip themselves with resources to resist, adapt and recover from a disaster

Thus, just make a response.

Model answer: Community programmes strengthen **community resilience** in neighbourhoods by helping residents **build stronger relationships** and communicate better with one another. Through activities such as disaster preparedness drills or educational workshops, residents become more aware of potential hazards and learn how to respond effectively. These programmes also **equip residents with resources and skills**, enabling them to organise themselves during emergencies, **adapt to challenges**, and recover more quickly from disasters. Overall, such programmes make the

community more capable of resisting and recovering from a disaster.

With reference to Tables 1.1 and 1.2, evaluate the validity of the students' findings regarding the popularity of local eco trails among tourists.

My answer: LIST. Firstly, the findings are valid location at which they gathered data is suitable as it addresses the investigation hypothesis. In this case, they held their surveys at Changi Walking Trail. To ensure accuracy in data, students should position themselves at the start and end of the trail to record data effectively. Secondly, the survey is valid because tourists were allowed to select more than one reason for visit, allowing tourists to express themselves fully. However, the survey may not be valid as it is a closed-ended questionnaire where tourists may not be able to share their opinions that are not included in the survey, thus not allowing them to express themselves fully. Thirdly, the survey accounted for tourists of different regions of origin which makes the data more accurate due to different opinions and views of people from different backgrounds. Moreover, the students included in their survey, reasons for visiting which addresses the aim of the investigation that was to find out about the popularity of local eco-trails, in this case they found about the reasons behind the popularity of the trails. Furthermore, the students' findings are valid as they have a wide sample size of 330 tourists, which is enough to accurately make conclusions from data researched.

As you can see, I did this question extremely poorly as I had no keywords and also very long-winded whereas the model answer I will show is much more targeted towards certain points and shorter.

I: The findings are **valid** because the data collected addresses the purpose of investigation [1 mark]. For instance, the longer the tourists stayed at the trail, the more enjoyable the trail was to them. This shows that such trail was popular among tourists [1 additional mark] OR For instance, understanding the reasons why tourists were attracted to such trail would provide the students a better understanding on why such trail was popular among tourists. •

S: The findings are **valid** as the **sample size was large** and from **many regions**. The survey results were thus **more representative of the opinions of other tourists** [1 mark]. • The findings might be **invalid** as the students carried out their **survey only on one trail in Singapore** and **this may be representative of other eco trails in Singapore** [1 mark]. Other eco trails in Singapore may **provide the tourists with a different experience and may affect the findings** [1 additional mark]. • The findings might be **invalid** as the **number of tourists from various regions are not the same and the results may be biased** [1 mark]. This is so as tourists from certain regions such as **Australia and New Zealand** may enjoy such trail due to **their lifestyle and environment compared to some other regions** [1 additional mark].

As you can see, they used words like representative of other..... And also 2 valid and 2 invalid with further explanations to obtain additional marks.

With reference to Fig. 1.2, suggest strategies that Yishun can adopt to improve community resilience against such hazards.

For this qn, we can use notes again: Community resilience

- strengthen relationships among residents and raise their awareness of potential hazards
- develop residents' ability to organise themselves and equip themselves with resources to resist, adapt and recover from a disaster

So we can say, Yishun can have community programmes that strengthen relationships among residents and raise their awareness of potential hazards. Through this, residents can get to know one and another so that they are able to depend on them in the event of fires or disasters. Moreover, there should be classes held at the Yishun Community Centre to train and develop residents' ability to organise themselves and equip themselves with resources to resist, adapt and recover from a disaster.

A group of students wanted to investigate the main reason why tourists from Asia visit Singapore. They went to Jewel on 3 consecutive days, beginning from a Monday afternoon to administer a questionnaire from 12pm to 1pm. Students stood at the main entrance of Jewel and approached 100 Asian-looking tourists. The questionnaire is shown in Table 1.1 Evaluate the validity of the students' findings on the main reasons why tourists from Asia visit Singapore.

L: The student's findings are valid as they conduct their questionnaire at Jewel which is a popular tourist destination in Singapore, allowing them to find out why tourists from Asia visit Singapore. However, the students' findings are not valid as they only conduct their investigation at Jewel whereas there are many more tourist destinations in Singapore, thus not representative of the opinions of the other tourists. S: The students' findings are valid as they have a large sample size of 100 Asian tourists. Thus, the questionnaire was more representative of the opinions of other

tourists. T: The students' findings are invalid as they only interviewed tourists for 3 consecutive days, beginning from a Monday afternoon. It does not capture tourist numbers and opinions across different days of the week such as weekends, thus the findings may not be representative of overall tourist patterns. Instead, the students should conduct their questionnaire **over a longer period of time** on both Wednesday and weekends. Lastly, the questionnaire is invalid as they only conducted the questionnaire from 12pm-1pm which may not be representative of the other tourists who visit Jewel or Singapore at other times of the day such as morning and evening. Instead, the questionnaire should be held at different times of the day such as morning, afternoon and evening to account for different flight times from different parts of the world.

Basically for this question, just yap.

Fig. 1.3 shows their survey results. Describe how the students collected the data shown in Fig. 1.3.

For these kinds of questions, just use your brain really.

Model answer: The students conducted observations at each park to count the number of amenities such as carparks, toilets, sheltered benches and vending machines. Then, they carried out a questionnaire or short interview survey with park visitors to collect their ages and record them into categories (Below 20, 21-40, 41-60, Above 60). They then tallied the responses and presented the results in table form by parks.

Using Fig.1.2, describe the ways in which Kampung Admiralty ensures economic and environmental sustainability.

The community gardens serve as a habitat for wildlife, providing protection and food for them. Moreover, the buildings are built with roof gardens, thus reducing the amount of solar energy the buildings

absorb. Thus, the need to rely on cooling appliances is reduced, reducing infrastructure costs. Moreover, the nearby studio apartments in high rise buildings means that there is high enough population density to support local businesses. Lastly, the apartments and facilities such as shops and local businesses are located close to each other, reducing transport and infrastructure costs as this reduces money spent on constructing roads and bridges to connect them.

Explain how community resilience can be developed in residential neighborhoods. HONESTLY THIS LOWKEY REALLY IMPORTANT SO MEMORISE THIS ONE!

Community resilience can be developed by strengthening relationships between residents. This can be achieved by community activities such as ice-breakers between residents to develop better neighbourly relations. As a result, they can care for and depend on each other in times of emergency. Next, community resilience can be developed by raising their awareness of potential hazards.

Community centers may organize educational workshops on topics such as causes and effects of fire, air pollution and traffic hazards. This develops residents' ability to resist, adapt and recover from disasters.

With reference to Fig. 1.1, suggest reasons for the increase in human-wildlife encounters.

ALSO REALLY IMPORTANT!

Model answer: Due to urbanization and development, this results in the shrinking of forests, which are the natural habitats of wildlife.

[1 mark] • Hence, some wildlife venture out of the natural areas in search of food or shelter, into urban areas, increasing human-wildlife encounters. [1 mark] • People's increased interest in

the outdoor recreational activities like trekking can also lead to more time in nature, which can lead to increase human-wildlife encounters. [1 mark] • The increased greening efforts by cities bring nature, like pocket parks, into urban areas, which can lead to more co-existence with nature and humans. [1 mark]

LAST EVALUATE VALIDITY! THIS TIME FULLY MEMORISE AND ANALYSE!! I'LL BOLD WHATEVER IS GENERALLY USED ALL THE TIME

Valid: • The findings are valid as the data collected addresses the investigation question, highlighting the main reasons for tourists' visit to Gardens by the Bay. [1 mark] • From the data collected, it revealed that flower dome is the most popular reason for tourists' visit, with 20 responses. [1 additional mark] • Primary data was collected by the students from tourists at the location. Primary data collected is recent and relevant. [1 mark] •

Convenience sampling method was used by the students, this method is a quick way to gather data needed especially since time is limited. [1 mark] • Students collected data on a weekend, which increases the possibility of sampling more people as more people are likely to visit on the weekends. [1 mark] Not valid: • The findings may not be valid as only 20 visitors were sampled, this sample size is too small and may not be representative of the population. [1 mark] • The findings may not be valid as the data was only collected over one weekend, which is too short a time period for data collection to make any definite conclusions. [1 mark] • Convenience sampling method was used by the students, this method may result in biasness as respondents are selected

at the convenience of the students and may not be representative of the population. [1 mark]

Using Fig. 1.2, explain how regulating ecosystem services are provided by nature. [3]

Nature lowers air temperatures through trees which provide shade and reduces the surface area of the ground in contact with the sun, thus, leading to lower temperature. Nature also regulates flooding through roots of plants and trees which absorb water from the soil, reducing likelihood of flooding. Nature also regulates air quality through trees which remove pollutants through photosynthesis where the leaves absorb carbon dioxide and other toxic gases to release oxygen which us humans breathe, leading to better air quality.

With reference to Fig. 1.3, suggest how the role of Civil Defence strengthens a community's resilience to resist, adapt and recover from a disaster.

For these questions, make sure to fully answer.

Resist: People attend classes which teach fire drills and first aid which helps individuals know what to do in the event of a disaster, increasing their preparedness in times of emergency.

Adapt: During a disaster, people can do CPR and first aid before professionals arrive.

Recover: After a disaster, Civil Defence can coordinate the response efforts, distributing help equally, efficiently and effectively to every resident. This helps to minimize chaos and so that the process of recovery is smooth sailing.

Describe how the data in Table 1 may be represented.

- Using a simple bar graph which shows values of Table 1 from categories- very dissatisfied to very satisfied [1m]. • The x-axis (horizontal axis) represents the categories- very dissatisfied to very satisfied. The y-axis (vertical axis) represents the values of the categories (for vertical bar graphs) [1m]

WITH THAT, WE ARE OFFICIALLY DONE WITH GEOGRAPHY IN EVERY DAY LIFE! BUT DON'T CELEBRATE YET! WE STILL HAVE YET TO LEARN TOURISM AND TECTONICS!!

TOURISM

Honestly, I'm doing this late at night so I'm lowkey tired af, so from now on, I'm lowkey just giving important shit no beating around the bush fr

What led to the growth of tourism?

Motivation to travel:

- **Individuals seeking relaxation:** Relieve stress and rejuvenate, escape stress from work life.
- **Individuals seeking personal growth and self-fulfillment:** Mecca, Saudi Arabia where 2 million Muslims around the world gather for pilgrimage. Also allows individuals to pick up new skills such as cooking cuisines.
- **Individuals seeking unique travel experiences:** Satisfy curiosity and explore different parts of the world and their unique cultures. Social media increased interest in such unique destinations.

Ability to travel:

- **Increase in disposable income:** Rapidly developing countries experience a growing middle class with increased disposable income.
- **Increase in leisure time:** Increased paid leave increases one's ability to finance travel, more time off from work, holidays.
- **Decreased transport costs:** Air transport has become more affordable which makes international tourism more affordable. Take Air Asia as an example (Budget Airlines)
- **Decreased accomodation costs:** Hotels and other accommodation facilities have become more affordable.

Mobility to travel:

- **Expansion of public transport services & infrastructure:** Public buses and train routes decrease travel times, increasing convenience in travelling, leading to growth in tourism.
- **Introduction of new modes of travel:** Tourists can travel faster through air, sea and land.
- **Increase in private car ownership:** Allows families to travel comfortably & conveniently in their own vehicles for leisure.

But simply put:

1. Motivation to travel

- a) individuals seeking relaxation, self-fulfilment and unique travel experiences
- b) made possible by growth in individuals' incomes

2. Ability to travel

- a) growth in disposable incomes and increased leisure time due to paid vacation.
- b) facilitated by business innovations, lower transport costs and accommodation costs

3. Mobility in travel

- a) expansion of public transport services and infrastructure, and new modes of air, land and sea travel

b) increased private car ownership improving travel convenience to nearby locations

Now let's look at possibly tested stages

Stagnation Stage

Tourist regions experience stagnation as they could not attract more visitors as the natural environments in the regions were destroyed over time and lost their appeal to visitors who were originally attracted by the natural beauty. The regions face competition from other similar attractions and unable to attract repeat visitors.

For example, the once popular coast destination of Blackpool in England lost its attractiveness due to competition from similar coastal attractions in the Mediterranean. People lost their interest when the initial appeal of the destination waned so they sought out a new destination.

Decline Stage:

Tourist arrivals decline significantly if no steps are taken to revive the destination. Contributions to the economy decline significantly. Local businesses are affected and may close, negatively affecting the economy and livelihoods. Less money available to maintain and improve facilities. Facilities deteriorate further, leading to fewer tourists. Blackpool lost its attractiveness due to competition from other European coastal locations with more competitive pricing. With fewer tourists, many old inns either deteriorated or had to shut down.

Rejuvenate Stage:

Destination becomes more attractive again by having new investments to develop attractions and facilities. Re-branding of the destination leading to an increase in tourist arrivals again. Local authorities engaged the private sector to invest \$300 million to build Blackpool Central, a world-class leisure development which aims to attract 600,000 visitors annually. It was re-marketed itself as a Muslim-friendly and disabled-friendly destination.

OVERALL

1. Exploration and involvement stages

- a) small number of tourists undertaking individual and irregular travel to visit the destination's primary attractions
- b) locals offer tourist services, advertising the destination, requesting for more public tourist amenities and facilities

2. Development and consolidation stages

- a) increase in tourist numbers with destinations having more man-made attractions, advertisements and foreign labour
- b) growth in tourist numbers slow and tourists outnumber locals resulting in a tourism dependent economy

3. Stagnation and decline or rejuvenation stages

- a) tourist numbers peak as a destination's carrying capacity is reached, resulting in negative impacts
- b) tourist numbers decline as a destination loses its tourist appeal or is rejuvenated with new cultural or man-made attractions

HOW DO TOURIST GENERATING REGIONS DEVELOP OVER TIME?

1. Exploration and involvement stages

- a) small number of tourists undertaking individual and irregular travel to visit the destination's primary attractions
- b) locals offer tourist services, advertising the destination, requesting for more public tourist amenities and facilities

2. Development and consolidation stages

- a) increase in tourist numbers with destinations having more man-made attractions, advertisements and foreign labour
- b) growth in tourist numbers slow and tourists outnumber locals resulting in a tourism dependent economy

3. Stagnation and decline or rejuvenation stages

- a) tourist numbers peak as a destination's carrying capacity is reached, resulting in negative impacts
- b) tourist numbers decline as a destination loses its tourist appeal or is rejuvenated with new cultural or man-made attractions

Now, we'll do tourist personalities. Venturers (ABAH) vs Dependables (MAMA)

Dependables: Spend cautiously, guided by authoritative figures, prefer structures in daily living and the company of friends and family

Venturers: Spend readily, guided by personal judgement, prefer different unique activities and being alone

Personality characteristics influence travel patterns:

- different types of tourist destination regions appeal to tourists with different personality characteristics
- tourists who are more Venturer types influence travel decisions of those who are more Dependable types

Common question: With reference to Fig. 2.1, explain how the different activities appeal to tourists of different personality characteristics.

Tourism activities such as base jumping and flights to space appeal more to the Venturers tourist profile, who are keen to reach out and explore the world. These tourists have a pro-exploration mindset, and they are keen to visit unique places where they can participate in new experiences and activities, even if it is less convenient. As these tourists are more spontaneous and open to a wider diversity of activities, including those that carry some risk, they may be drawn to more adventurous activities like base jumping and space exploration. Tourism activities such as guided walking tours and sightseeing buses may appeal more to the Dependables tourist profile. The dependables are tourists who try to make much of their travelling predictable.

Common question: Personality characteristics of travellers can determine travel preferences and patterns such as the choice of destinations and tourist activities. This is because the features of a tourist destination may appeal more to specific personality traits [1 mark]. For instance, more adventurous tourists will prefer destinations that offer excitement and novelty, and enjoy activities like extreme sports, hiking, diving, and exploring off-the-beaten-path destinations [1 additional mark].

TRENDS IN TOURISM:

- **Globalisation and tourism:** continued expansion in international tourist arrivals; increasing diversity in tourist generating and destination regions
- **Diversity in tourism demand:** growing popularity of lesser-known/less accessible destinations; emergence of new experiences like adventure, heritage, sports, health tourism
- **Diversity in tourism supply:** rise of small specialist operators complementing mass market operators; shift in marketing from print/broadcast media to online media

Common Question: Describe how globalisation affects trends in international tourism.

Globalisation has resulted in the continued expansion in international tourist arrivals due to the increasing diversity in tourist generating and destination regions. Then, use the MAMA (Motivation, Ability, Mobility).

(Motivation) As people gain access to new ideas of tourism destinations and experiences, especially through new online media, tourists gain more motivation to travel beyond their own country. •

(Ability) People also have an improved ability to search for and buy tourism-related services from anywhere, resulting in greater

competition among businesses. This creates greater incentive for businesses to offer more value-for-money travel experiences that encourage more people to travel. • (Mobility) As places become more connected via different transport modes, traveling has become more convenient, increasing tourists' mobility in travel, especially with direct flights between countries.

IMPACTS OF TOURISM

ECONOMIC

Positive economic impacts of tourism

- Employment opportunities (formal & informal sectors)
- Income generation (tourist spending on goods & services)

Negative economic impacts of tourism

- Economic leakages (less revenue kept locally)
- Overdependence on tourism (vulnerable to sudden fall in tourists)

SOCIAL

Positive social impacts of tourism

- Cultural preservation
- Enhancing cultural ecosystem services

Negative social impacts of tourism

- Commodification of cultural practices & art forms

- Cultural clashes
- Rise in crimes

ENVIRONMENTAL

Positive environmental impacts of tourism

- Conservation of natural environments & preservation of biodiversity
- Restoration of degraded aquatic & terrestrial ecosystems

Negative environmental impacts of tourism

- Pollution
- Depletion of natural resources & threats to wildlife habitats

How do we work towards sustainable tourism?

- Sustainable tourism development
 - Achieved when sustainability principles are applied to the economic, social and environmental aspects of tourism development
 - All three dimensions are balanced to guarantee tourism's long-term sustainability
- Economic sustainability
 - Tourism development should continually provide employment opportunities and income growth
 - Tourism development should result in more social services that raise local standards of living

- **Social and environmental sustainability**
 - Tourism development should respect authenticity of local communities, practices and art forms; and contribute to intercultural understanding and tolerance
 - Tourism development should maintain essential ecological processes and conserve natural heritage and protect biodiversity

How effective are stakeholders in influencing sustainable tourism development?

- **Governments and international organisations**
 - Governments establish policies, create plans and enforce regulations to manage tourism development
 - International organisations offer consultancy, financial assistance and raise public awareness

- **Businesses, local communities and tourists**

Businesses and local communities can seek advice and participate in decision making

- Tourists can develop genuine interest in destinations and interact responsibly

Challenges faced by stakeholders

- Stakeholders may have conflicting priorities and needs
- Stakeholders have differing levels of control over resources and may measure sustainability differently

How effective are governments in influencing sustainable tourism development?

- **Governments influence sustainable tourism development by:**
 - Establishing policies and creating plans
 - Enforcing regulations

- **Limitations of governments' effectiveness:**

- Poor enforcement of regulations due to lack of resources, political influence or corruption
- Prioritising economic development over environmental and social sustainability

How effective are international organisations in influencing sustainable tourism development?

- **International organisations (IGOs and INGOs) can influence sustainable tourism by:**

Offering consultancy on how sustainable tourism development can be achieved

- Providing financial assistance to stakeholders
Raising public awareness on contributing to sustainable tourism

Limitations of international organisations' effectiveness:

- Lack of understanding of local contexts, leading to limited support from locals
- Lack of funding, making it difficult to implement plans

How effective are businesses in influencing sustainable tourism development?

- **Businesses can influence sustainable tourism by:**

Seeking advice from other stakeholders on sustainable tourism practices

- Participating in decision-making for sustainable tourism development

- **Limitations of businesses' effectiveness:**

- May compromise sustainable practices to prioritise profit

- Differing understanding of sustainability, which can lead to inconsistent practices or greenwashing.

How effective are locals in influencing sustainable tourism development?

- **Locals can influence sustainable tourism by:**
 - Seeking advice from other stakeholders regarding sustainable tourism practices
 - Participating in decision-making for sustainable tourism development
- **Limitations of locals' effectiveness:**

Lack of financial or technical assistance, making it difficult to carry out plans

 - May prioritise economic benefits over sustainability to support livelihoods

How effective are tourists in influencing sustainable tourism development?

- **Tourists can influence sustainable tourism by:**
 - Developing a genuine interest in the tourist destination's environment, culture, and economy
 - Interacting responsibly with the environment and local communities when travelling
- **Limitations of tourists' effectiveness:**
 - Some tourists may prioritise personal convenience over sustainability
 - Lack of awareness or education on sustainable practices may reduce impact

NEXT CHAPTER OF TOURISM: APPROACHES

GENERAL SUMMARY:

1. Ecotourism

- Sustainable tourism in natural areas allowing tourists to experience nature
- Conserves environment while benefiting local communities (economic, social, environmental sustainability)
- Involves multiple stakeholders depending on projects

Benefits

- Educates tourists and increases appreciation of nature
- Tourism revenue can be used for conservation
- Increases awareness of protecting biodiversity and ecosystems

Limitations

- Uncertainty in conservation efforts → too many tourists or profit motives may damage environment
- Uncertainty in involving locals → non-locals may be hired if locals lack skills

2. Community-Based Tourism (CBT)

- Small-scale tourism managed by local communities (e.g. homestays, agricultural tourism)
- Ensures involvement of locals and benefits them economically & socially

Benefits

- Locals participate in decision-making
- Provides employment and income
- Revenue funds community projects
- Promotes cultural preservation and respect for environment

Limitations

- Loss of culture due to commodification
- Competition with large-scale operators

3. Pro-Poor Tourism (PPT)

- Improves livelihoods of the poor through training and access to micro-finance
- Aims to generate economic, social, and environmental benefits

Benefits

- Training equips locals with skills for jobs or businesses
- Micro-finance helps set up small businesses → income generation

Limitations

- Limited poverty reduction compared to direct social investment
- Unequal benefits as non-poor may gain more access than the poor

**CONGRATULATIONS! YOU HAVE REACHED
THE END OF TOURISM!**

The following is just possible questions I practised. :/

Explain how globalisation encourages international tourism.

Globalisation has resulted in the continued expansion in international tourism, increasing tourist arrivals due to the increasing diversity in tourist generating and destination regions. Firstly, as people gain access to new transport modes, travelling to other countries has become easier, quicker and more convenient, increasing tourists' mobility in travel, encouraging them to travel. Secondly, with globalisation, people have the ability to search and for and buy tourism-related services from anywhere, resulting in greater competition among businesses, therefore boosting the local economy. Lastly, as people gain access to new ideas of tourism destinations and experiences, especially through social media, tourists gain more motivation to travel beyond their own country.

Suggest how tourism may affect the environment in each site differently. (3 mark question 1 pro, 2 cons)

Firstly, tourists may have a detrimental effect on the environment through pollution. This can be due to tourists leaving a great amount of litter behind. Secondly, tourists may encourage locals to restore degraded aquatic and terrestrial ecosystems. Lastly, tourists may encourage locals to conserve natural environments and preserve biodiversity, overall positively impacting the environment.

Outline the role of the government in enabling sustainable tourism development.

The government's role is to enforce regulations in which businesses operate and help in marketing tourism. The government's role is to also implement laws to prevent tourists from committing crimes and polluting the environment. Moreover, the government has to attract and control tourism development through government ministries. Lastly, the government has to create plans that shape the economic framework for the tourism industry.

Explain a negative social impact that tourism may bring to the tourist destination regions.

Tourists may come into cultural clashes with locals due to differences in traditions, culture and values, leading to tension among tourists and locals. Tourism may also lead to the commodification of cultural practices and art forms which can weaken the significance of culture. Tourism may also result in the rise of crimes due to more opportunities for criminals to target valuable tourists that carry valuables, leading to the rise of crimes.

Explain how Less Developed Countries (LDCs) may be less effective in ensuring sustainability in tourism.

Governments in LDCs may lack resources or political influence and may face corruption. They may be unable to ensure that

regulations are adhered to, hindering sustainable tourism development. [1 mark] For example, a recent study finds many African countries suffer from bribe culture and earnings from tourism are not channelled towards developing social services like education and healthcare is diminished. [1 additional mark] • Governments in LDCs may also put economic development first in order to address the immediate needs of society and neglect the environmental and social dimensions of sustainability. [1 mark] For example, Mount Everest has poor enforcement of waste disposal that leads to the mountain becoming increasingly polluted because any enforcement on this is feared to drive away tourists. • Local businesses in LDCs also tend to prioritise making profits over sustainable practices and the practices in place may not be carried out in the long run. [1 mark] In addition, businesses may still market themselves as "sustainable" to gain profits when their practices may not necessarily be so, known as greenwashing.

Explain how tourism can positively impact the economy.

Tourism brings tourists from all over the world to visit a country's popular tourist destinations where tourists spend money on goods and services which allows local businesses there to thrive, generating income for the country. Moreover, people can take up employment at these local businesses to earn income, thus earning a stable income and increasing their standard of living.

Explain the role of governments in influencing sustainable development in tourism.

Governments can implement laws and regulations to deter tourists from committing crimes and polluting the environment, ensuring locals' safety and minimised damage to the environment, while maximizing benefit to locals. Secondly, governments can create plans to shape the economic framework for the tourism industry. Lastly, the government has to attract and control tourism development through government ministries.

2(a) Explain why some tourist regions experience stagnation.

Tourist regions may experience stagnation as they could not attract more visitors as the natural environments in these regions were destroyed over time, resulting in the natural environments losing their appeal to visitors who were originally drawn to their natural beauty.

Tourist regions may also face competition from other similar attractions and are unable to attract repeat visitors. For example, the once popular Blackpool in England lost its attractiveness due to competition from similar coastal attractions in the Mediterranean. Overall, people lose their interest in the tourist regions due to its initial attractiveness waning over time.

With reference to Fig. 2.2, describe the negative impact of tourism on the natural environment.

Fig 2.2 shows a bunch of litter scattered across the beach floor. This shows that tourists can leave large amounts of litter behind, resulting in pollution. Polluted waters can cause suffocation and death of marine life, thus negatively impacting the natural environment. On the other hand, land pollution can cause wildlife to feed on the large piles of litter, causing them to choke and suffocate, resulting in the death of wildlife.

With reference to Fig. 2.2, suggest why it is difficult to reduce the negative impact of tourism on the natural environment.

Firstly, for tourist destinations whose economy are over-reliant on tourists' spending, they often are unable to afford closing off certain locations like the beach in this case temporarily for them to recover from pollution. Secondly, local authorities with limited funds can only provide basic needs like utilities and lack resources to manage pollution caused by mass tourism. Lastly, many tourist destinations would render pollution too costly to construct sewage treatment facilities and install waste disposal systems to prevent pollution.

Explain how stakeholders' conflicting priorities and needs could affect sustainable tourism development

While tourist businesses may prioritise short-term profits and withhold their support for longer-term projects that would benefit the destination, local communities may prioritise environmental sustainability over economic gain.

With the use of a relevant case study, explain why tourist destinations may face decline as a stage of tourism development.

Tourist destinations may face decline if no steps are taken to revive the destination and contributions to the economy decline significantly. Local businesses may be affected and may close, negatively affecting the economy and livelihoods. Furthermore, less money is available to maintain and improve facilities. For example, Blackpool lost its attractiveness due to competition from other coastal locations in the Mediterranean with more competitive pricing. With fewer tourists, many old inns had to shut down.

(b) Explain how tourism can positively impact the economy.[3]

Firstly, tourism contributes positively to the economy as it brings employment opportunities and job creation, thus allowing local businesses to thrive. Moreover, people can take up employment at these local businesses, providing them with a stable income and increasing their standard of living. Tourism can also generate income due to tourists' spending money on local goods and services, overall boosting the destination's economy.

(c) Explain the role of governments in influencing sustainable development in tourism.[4]

The government has the ability to create plans that shape the economic framework for the tourism industry. Secondly, governments enforce regulations in which the local businesses operate and help in marketing tourism. Thirdly, the government has to implement laws to prevent tourists from committing crimes and potentially contributing to pollution. Lastly, the government has to attract and control tourism development through government ministries.

Explain a negative social impact that tourism may bring to the tourist destination regions.

Tourists may come into cultural clashes with locals due to difference in traditions, cultures and values, leading to tension between tourists and locals. Tourism may also lead to the commodification of cultural practices and art forms, which can weaken the significance of culture. Tourism may also result in the rise of crimes due to more opportunities for criminals to obtain monetary gain such as vulnerable tourists that carry valuables, leading to the rise of crimes.

**WITH ALL THESE TOURISM QUESTIONS
COMING TO AN END, WE CAN MOVE ON
TO..... TECTONICS!!**

**Firstly, let's look at the layers of the earth and analyse
em'**

Core:

- Innermost
- 3300km thick
- Highest, Temperature between 4400 to 6000 degrees celsius.

Mantle:

- In between crust and core
- 2900km thick
- Temperature of 1000 degrees celsius to 3700 degrees celsius

Crust:

- Outermost
- Lowest temperature
- Thinnest 6-70km

Now, let's move on to convection currents:

How do convection currents lead to tectonic plate movement?

Model answer: Heat from the earth's core causes the mantle material to become **less dense**. Mantle material **rises towards the surface**.

Divergent: The **rising** mantle material then **spreads beneath the plates** and **drag them apart**, causing divergent plate movement. The mantle material then **loses heat and sinks towards the core**.

Convergent: Convergent plate movement occurs where the **convection currents collide**. The materials then get b, and the **process repeats**. The **rising and sinking** of the mantle material **forms convection currents**.

WB SLAB-PULL FORCE?

How does slab-pull force contribute to tectonic plate movement?

When two plates converge, the denser oceanic crust is pulled down by gravity as it subducts beneath the less dense crust. The denser oceanic crust sinks deeper into the mantle under its own weight, pulling the rest of the plate with it, contributing to further convergence.

What is the evidence of seafloor spreading?

Where two plates move away from each other at divergent plate boundaries, magma rises from deep within the earth through the mid ocean ridge and cools to form a new oceanic crust.

How does evidence of seafloor spreading support the plate tectonic theory?

The age of rocks of the seabed shows a pattern where rocks nearer to the centre of the mid-ocean ridge are the youngest and that the rocks further away from the ridge are progressively older. This shows how new oceanic crust is created at divergent boundaries and then moves laterally on both sides of the mid-ocean ridge as seafloor spreading continues. This proves that new crust is continually formed at divergent boundaries of the mid-ocean ridges, and as plates move, older crust is destroyed further away at oceanic trenches.

How does magnetic striping support the plate tectonic theory?

Model answer:

Firstly, the zebra-like pattern is symmetrical on both sides of mid-ocean ridges, showing that it is not a random or isolated occurrence. Secondly, magnetic striping provides evidence that plates move as shown when oceanic plates move away from each other, iron-rich lava erupts from the centre of the mid-oceanic ridge. Lava cools, solidifies and forms new oceanic crust. Crust is then pushed in both directions away from the ridge when new lava erupts and solidifies as plates move apart. As iron-rich lava solidifies, it records the magnetic polarity. When Earth's polarity reverses, the rocks also record the polarity reversals. Over time, as more lava moves away from the ridge due to plate divergence, a symmetrical zebra-like pattern called magnetic stripping forms.

Oceanic-Oceanic divergent:

Two oceanic plates move apart, the decrease in overlying pressure causes parts of the underlying mantle to melt, forming magma. Magma rises through cracks in the crust and fills gaps caused by the spreading plates. Lava cools and solidifies to form basalt, forming a new oceanic crust.

Continental-Continental Divergent plate boundaries:

Two continental plates move apart. Rocks eventually fracture to form parallel faults. The rock between these faults

collapses to form a deep rift valley with steep sides. As the plates move apart, the decrease in overlying pressure causes parts of the underlying mantle to melt, forming magma. Magma rises through cracks in the crust to form volcanoes. Earthquakes occur as stress and tension are released when plates move.

DIFFERENCE IS THAT OCEANIC OCEANIC IS SIMPLE BUT THEN CONTINENTAL CONTINENTAL A BIT MORE COMPLEX>

Convergent: Oceanic-Oceanic

Two oceanic plates collide. The denser plate subducts beneath the other less dense plate. This forms an oceanic trench. As the subducting plate sinks into the mantle, the high pressure forces water out of its oceanic crust. Water lowers the melting point of the overlying mantle, causing it to melt, forming magma which rises through the cracks in the crust to form a volcanic island. Friction along this plate also causes earthquakes.

Continental-Continental convergent plate boundaries:

Two continental plates collide. Subduction does not take place because continental plates are too buoyant to subduct. Enormous pressure causes the rocks to be uplifted and buckled to form fold mountains. No volcanoes formed here because magma doesn't rise to the surface.

Oceanic-Continental Convergent plate boundaries:

An oceanic plate collides with a continental plate. The denser oceanic plate subducts beneath the less dense continental plate. This forms an oceanic trench in the subduction zone. As the subducting plate sinks into the mantle, the high pressure

forces water out of its oceanic crust. Water lowers the melting point of the overlying mantle, causing it to melt, forming magma which rises through cracks in the crust to form volcanoes on the continental plate. Enormous pressure at this plate boundary causes rocks on the continental plate to be uplifted and buckled, forming fold mountains.

Transform plate boundary: Stress caused by the plate movement produces a fault. Earthquakes occur here as one plate suddenly slips past another. Magma does not rise to Earth's surface thus no volcanoes are formed.

Earthquakes: The EQ was caused by the converging plates, namely the Eurasian Plate and Pacific Plate [1m]. The denser oceanic Pacific plate subducts beneath the less dense Eurasian continental plate [1m additional]. • This process is not smooth, hence the friction causes stress to build up [1m]. • The stress is released in the form of ground shaking [1m].

Mw scale: Estimates total energy released during an earthquake instead of just the largest wave like the Richter Scale.

Richter scale: It would rate an earthquake with a single drastic spike in wave energy as having a higher magnitude than an earthquake with long large waves of earthquake.

Super violent monsters destroy peaceful environments:

Feature	Stratovolcano (Composite Volcano)	Shield Volcano
Silica Content	High	Low
Viscosity of Magma	High	Low
Magma	High	Low
Dissolved Gases	Cannot escape easily	Escapes easily
Pressure Build-up	Builds up	Less
Eruption Type	Explosive	Effusive
Shape	Steep sides, narrow summit	Broad summit, gently sloping sides
Examples	Mount Mayon in Philippines	Kilauea Loa (Hawaii)

COMMON QUESTION: DISTRIBUTION OF EARTHQUAKES:

G: Earthquakes occur along all types of plate boundaries. The largest concentration of earthquakes is at the Pacific Ring of Fire. At plate boundaries, plates are pushed by tectonic forces, stress builds up and energy is eventually released.

S: Earthquakes occur more commonly along convergent plate boundaries of subduction zones as more stress is built up during subduction.

Exception: Some earthquakes may occur away from plate boundaries such as within the Eurasian plate.

COMMON QUESTION: VOLCANOES DISTRIBUTION

G: Volcanoes are generally located near convergent and divergent plate boundaries. At these plate boundaries, magma rises up to the surface, forming volcanoes.

S: Volcanoes not found near transform plate boundaries or Continental-continental plate boundaries as magma does not rise up to the surface.

E: Hot spot volcanoes are found away from the plate boundaries.

Now, from now on is all the ESSAY RELATED BS.

So firstly remember that:

Most: 3 pts (less detailed) with a weigh at the end

More: 2 pts with high detail and a weigh at the end

TOURISM:

<https://document.grail.moe/2c5e3e8c53a64ce9821145115861f427.pdf>

TECTONICS:

<https://document.grail.moe/f812444b41254f089b7481205e687266.pdf>

Personal Notes: (Hazards)

1. Tephra Hazards:

- ***can travel thousands of kilometers, polluting large areas, damaging forests, and suffocating wildlife.*** For instance, the ***1991 Mount Pinatubo eruption buried extensive areas of forest and destroyed over 800 km² of rice fields, severely impacting the livelihoods of many farmers.***
- **can collapse roofs and can weaken building structures, making them prone to collapse.**
- **can cause respiratory issues, eye irritation, and even suffocation in severe cases.**

Volcanic Gases:

- **can lead to acid rain, damaging vegetation and soil, while it accumulates in low-lying areas, posing lethal risks to wildlife and people alike.** The **Dieng volcano eruption in Indonesia resulted in deadly gas emissions that killed about 150 people.**
- **can cause serious health issues, including respiratory distress and irritation of the skin, eyes, and throat. it can lead to death.**
- **can corrode buildings and infrastructure, leading to costly repairs and safety hazards for those living nearby**

Lava Flow Hazards:

- **Although direct fatalities from lava flows are rare due to their slow movement, they can destroy homes, properties, and infrastructure in their path, as seen during the 2018 Kilauea eruption, which destroyed over 600 homes and damaged communication lines.**
- **can devastate large areas of forests and ecosystems, leading to long-term environmental consequences.**

- can disrupt vital services, **complicating rescue efforts and emergency responses.**

1. Pyroclastic Flow Hazards

- **These flows can reach temperatures of up to 700°C and speeds exceeding 200 km/h , making them nearly impossible to outrun. They ²can obliterate anything in their path, including homes, infrastructure, and entire communities. The *2010 Merapi eruption in Indonesia illustrated this danger, resulting in about 350 deaths, primarily from burns and blast injuries.***
- **can devastate vast areas of land, resulting in a loss of biodiversity. The intense heat can incinerate forests, wildlife habitats, and agricultural lands, leading to long-term ecological damage.**
- **can destroy electricity and communication lines, disrupting essential services and complicating rescue and recovery efforts for affected populations.**

Lahar Hazards

- **Lahars can flow at speeds of up to 200 km/h and cover significant distances. They can bury homes, villages, and infrastructure under thick layers of mud, as demonstrated by the 1985 Nevado del Ruiz eruption in Colombia, where lahars buried more than 20,000 people within seconds.**
- **Lahars can pollute rivers and streams with debris, which can kill aquatic life and disrupt local**

ecosystems. The thick mud can also make waterways unusable for drinking and irrigation, impacting agricultural practices and community health.

- **Lahars can block roads and railways with debris, hindering rescue operations and making it difficult for emergency services to reach affected areas. This can exacerbate the impact of volcanic eruptions and delay recovery efforts**

