

ANSWER SHEET

Name of Candidate: Xelene Dabas

Test Code: Geography - 2

Subject: Geography Mains

Registration No.

EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

INSTRUCTIONS:

1. Do furnish the appropriate details in the answer sheet (viz. Name , Id Number and Test Code)
2. The Candidate should fill the index table, especially for him/her.
3. In the left margin, she/he should write only question number and in the right margin, nothing should be written.
4. The page number should be coded by the candidate himself and the range of page number related to the answer of the question should be used to complete the index table.
5. All Parts of the questions should be written at one place.
6. No Supplementary sheet shall be provided by the management. So the candidate is advised to accommodate required information within the space provided.
7. The candidate need not write anything in his /her answer that derogates the dignity of an individual or an organization.
8. The candidate should respect the instructions, given be the invigilator.
9. The Examinee has to submit the answer sheet to the invigilator after completion of examination. However , he /she is allowed to take away the question paper.

INDEX TABLE

Q.No.	Page No.	Maximum Marks	Marks Obtained
1.	1		
2.			
3.			
4.	10		
5.	19		
6.	29		
7.			
8.	36		
9.			

Total Marks Obtained

Remarks :

Signature of Examiner

1 a)

Environmental education

The main aim of environmental education is not just to build awareness but also to impart the requisite skill sets and capabilities to recognise, analyse and find solutions to the various environmental problems we face today.

UNESCO in their second International Conference on Environmental Education in 1977 (Tbilisi Conference) set out the objectives and guiding principles on the basis of which environmental education programs may be modelled.

The basic objectives as set out included:-

- to develop an awareness and sensitivity within people about the problems facing our environment today
- to impart the necessary skills to people to efficiently handle environmental problems
- to impart experiences and a basic understanding of the environment
- to ensure the environment is understood as an entirety in light of social, economic,

political and aesthetic factors in the evaluation of various programs.

The guiding principles as laid out by the UNESCO in this conference were:

- Environmental education programs should ensure a multidisciplinary approach. It stressed the need to consider the environment as a whole.
- This education should be a continuous life process, from pre-school level upto non-formal education programs in work-life related matters.
- Issues to be examined from all levels: local, national and international
- There is a need to stress on current as well as potential environmental issues

In the Indian scenario, the Ministry of Environment and Forest holds many non-formal Environment education programs.

In today's scenario, with increasing emphasis on environment and sustainable development, formal education in environmental studies has opened up new job avenues especially in

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sectors like government policy making,
oil industries, etc.

1 b) Influence of Man on ecology and environment

Man, today, has emerged to be the biggest modifying factor on the environment he lives in as well as the ecology as a whole.

Some of the various aspects in which he has influenced/modified the environment/ecology are ^{briefly} explained below:-

(i) Modification of landforms - Through mining as well as requirements for construction, man has changed landforms at rates faster than natural

(ii) Degradation of slopes - Through the process of road and other infrastructure building

(iii) Coastal erosion - has increased due to clearance of coastal vegetation of mangroves for development ~~process~~

(iv) Modification of fluvial processes occurs through development of hydroelectric and other projects as well as increased sediment supply due to rapid soil erosion

(v) Soil erosion is accelerated due to deforestation and bad agricultural practices

(vi) Loss of biodiversity is brought about when man clears away existing flora and fauna in preference for a single species. It also occurs

indirectly through loss of habitats as man clears away natural environment for his needs

(vii) Introduction of alien species either purposely or accidentally, eg. thus putting strain on local populations

(viii) Global warming leading to modified climate change is directly related to modification of the atmosphere.

(ix) Eutrophication is caused by clearing of natural vegetation along desert fringes as well as bad agricultural practices.

(x) Extinction of species has been brought about by destruction of habitats as well as excessive hunting of fauna.

Thus ~~is~~ These are some of the important adverse effects that man has had on his environment.

1(c) Soil Profile

The soil cover at any location is not homogenous with depth. The variation of the physical and chemical characteristics of the soil with depth is known as the soil profile.

Though the actual characteristics and depths of the various sub-surface horizons may vary with from location to location, certain general characteristics may be described about the soil profile.

From the surface ^{down} to the original parent rock material, the following horizons may be observed:- (note:- alphabets are based on modern usage)

Horizon name	Description
O L	Organic litter layer consisting of fallen leaves/branches, bodies of dead fauna, etc. Decomposition has not set in as yet in this layer.
F	<u>Decomposed organic matter.</u> In this layer, decomposition has set in but not progressed to

H	completion. <u>Humus Rich Layer</u> - This is the layer in which humus or decomposed organic matter has been mixed with the inorganic components of soil.
A	<u>Eluviated zone</u> : From this zone, various ^{organic &} inorganic constituents of the soil have been leached away by ground water. Eg. Iron and Al oxides, etc. This is a generally light coloured horizon. It is the zone of maximum leaching.
E	<u>Transition zone</u> : This consists of two layers: └ Transition to B └ Transition to A.
B	<u>Illuviated zone</u> : This is the zone of redeposition. The constituents leached from Horizon A are redeposited in this horizon. The bottom of this zone is marked by a transition to the 'C' horizon.
C	<u>Weathered Bedrock</u> : This zone consists of loose unconsolidated weathered rock material, but can still be recognised as the parent material.
D	<u>Hard Bedrock</u> : This is the fresh unweathered parent rock material.

- 1(d) SOCIAL FORESTRY by definition is the involvement of the local community/society in the afforestation and maintenance of neighboring forest programs. It has been devised to counter the growing deforestation especially around rural fringes. The aims of social forestry include engaging the local community in both afforestation as well as maintenance of neighboring forests while allowing them to enjoy the benefits of forest produce in a sustainable manner. Thus the local community is motivated to protect the forests.
- Social forestry programs can be implemented in a three tier approach.
- (A) Community Woodlots - where the community itself plants trees on community grounds and maintains them.
- (B) Public woodlots where the government creates woods on public ground and assigns the community to look after it.
- (C) Farm forestry where individual farmers are provided with saplings to grow on their excess land/near their houses.

Agro forestry is an extension of social forestry where wooded-plants are grown along with crop plants. This serves the dual purpose of reducing soil erosion and water run-off while enabling water conservation measures.

Social forestry has emerged as a successful scheme in reforestation efforts. by instilling within the local communities a sense of protection to the forests which provide them with an additional source of income through fuel wood, gum, lac, etc.

It has increased the financial stability of marginalised sections and reduced their dependance ~~of~~ on money lenders, etc.

However, the government still has a long way to go to ensure that the community is not exploited by middlemen in the sale and profits from forest produce.

4(a)

Gene Pool refers to the stock or collection of genes within an inter-breeding species.

Whereas, a gene pool center refers to a place/location which is the origin of a vast variety of species which have now been domesticated for use by man.

~~A gene pool~~ An area is usually given the status of a gene pool or biodiversity ~~rich~~ location if it is recognised to be the site of origin of a relatively large number of endemic species. These are usually areas of very rich endemic biodiversity.

The concept of Gene Pool was first introduced by the Russian geneticist Vassilov. He recognised seven such gene pools ^{centers} world wide which were the origins for most of the common domesticated species.

These 7 centers are enlisted below:

- (i) South-East Asia - This center spreads across India, Indo-China, the Malayan archipelago.
- (ii) ~~South~~ West Asia - This region includes North-west Indian peninsula and the middle-East.
- (iii) East Asia - Comprising of China and Japan
- (iv) Mediterranean region surrounding the Mediterranean Sea
- (v) Ethiopian center in Sub-Saharan Africa
- (vi) Central American including South Mexico, West Indian archipelago and Central American countries
- (vii) Andian which includes Andies of South American countries including Chile, Bogota.

After Vassilov, various other scholars have come up with lists of gene pool centers. Most of these centers are in the third world countries having rich biodiversity.

Another list of gene pool centers, or regions of biodiversity cover ^{origins of} almost all of the major crops, tubers, cereals, pulses, oilseeds, fruits, vegetables, spices, timber trees, and other crops. This classification is as follows (8 centers):-

(i) Mexico and Central America - origin for maize, tomato, common bean, cocoa, tobacco, cotton

(ii) Andes - origin for common bean, maize, potato, peanut, tomato

(iii) Asia minor & Mediterranean - grape, Alfalfa, barley, oats, onion, peas, pear, rye, wheat

(iv) Ethiopia - Banana, barley, coffee, onion, wheat

(v) Central Asia - Apple, apricot, carrot, wheat

(vi) India - Cotton, rice, sorghum, soybean, sugarcane, chick pea, various grams

(vii) South East Asia - Banana, orange, rice

(viii) China - Apricot, orange, rice, sugarcane, tea

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environment today faces a plethora of problems. These are multifaceted in nature, not only their origin and manifestation but more importantly their effects on the survival of our planet as we know it.

Environmental policy needs to be comprehensive and robust to address these problems. The best policies take a multi-pronged approach, i.e. to not only address the origin but also the effects of environmental damage. Policies should include programs that have both restrictive (or negative) and positive encouraging aspects.

As mentioned below are some of the aspects that a comprehensive policy needs to address in order to address pressing environmental problems.

Pollution is one of the most pressing problems we face, be it atmospheric, water or soil.

Measures to address this issue should focus

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on arresting the sources of pollution. If we can minimise the source, our ecosystem is capable of renewing and cleaning up itself upto certain limits.

Implementation of strict laws, imposing fines on polluters, even termination of licences of excess polluters will go a long way in solving this issue. This coupled with programs of rewards to companies/individuals who take active efforts to minimise pollution would also gain a lot of ground. Issuance of carbon credits to institutions who actively reduce CO₂ emissions is also an effective program.

Environmental pollution is directly related to emissions of green house gases and climate change. Implementation of emission norms for vehicles as well as industries is a must to address this issue.

In terms of soil pollution, encouragement of green practices like organic farming will be effective in an agricultural country like ~~our~~ ours.

(ii) Deforestation is another major problem we face. Social forestry programs have been proven to be successful in protecting forests at fringes of rural settlements. Proper land use planning coupled with advanced Remote Sensing and GIS based mapping help in conservation and monitoring of forest cover. ~~Encourage~~ Forest agencies should be given enough manpower and facilities in order to prevent illegal ~~timber~~ tree felling.

(iii) Soil Erosion is mainly caused by clearing of vegetation cover and bad agricultural practices. Once again social forestry and agroforestry are essential in arresting the degradation of fertile land, along with education of farmers about the right combination of agricultural practices. A related problem is desertification along desert fringes. Agriculture in these regions should be practiced in a controlled well planned way coupled with increasing vegetation cover and stabilising sand dunes.

Careful studies before implementation of any

river valley project is required as these can cause tremendous damage to with far reaching effects

(iv) Loss of Biodiversity/Extinction of species is slowly gaining gigantic proportions, not just in terms of wild flora and fauna, but also in terms of domesticated resources. We need to move away from pushing the growth of particular single varieties of crops to a more inclusive pattern of production which gives equal importance to all varieties. Monoculture plantations should be discouraged.

The government should keep strict control over the introduction of alien species into ecosystem to prevent strain on local populations. Also, laws preventing trade in endangered flora and fauna should not just be strict but need to be implemented thoroughly. In situ conservation measures are the best solutions to preserve endemic biodiversity, as flora and fauna thrive best in their natural habitats.

(v) Natural Resource Depletion: Though many may not see this as a direct environmental

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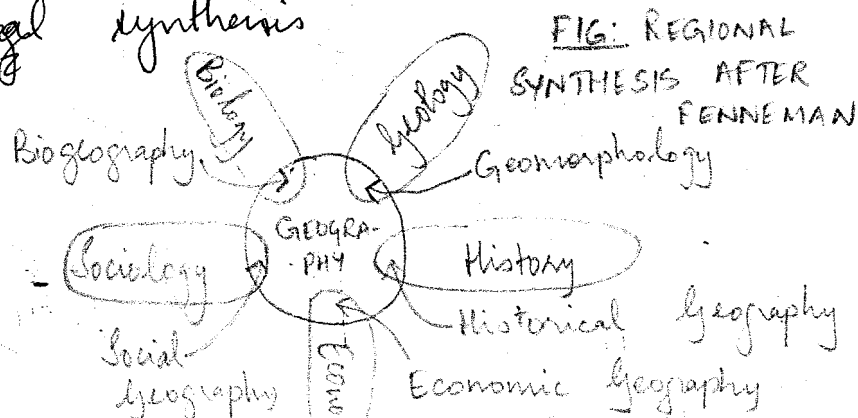
concern, it is indirectly linked. As our current natural resources get depleted, we destroy more and more of our ecosystems in the quest for new resources. Proper utilisation and recycling of existing resources should also form part of a comprehensive environment policy.

Finally, there needs to be a broad-based approach to educate and create awareness among the people about our environment and its related problems. An environmental policy is incomplete without it including proper guidelines for implementation of environmental education programs.

Additionally, the corporate and industrial sectors too need to be made more environmentally conscious by making it mandatory to carry out Environmental Impact Assessment studies before implementation of any project, no matter how small.

5a) Regional Synthesis is a subject in geography which fuses the spatial and economic aspects. Regions are demarcated and defined. ~~at the place where~~ The aim of regional synthesis is to amalgamate all the internal morphological, ecological, social etc characteristics of a region and also carry out comparative studies with external regions.

The concept of regional synthesis was first ~~intro.~~ introduced by N. Fenneman in his article 'The Circumference of Geography' in 1918. He explained that since geography shared its content matter with various other disciplines, an interdisciplinary approach is essential in the study of regional synthesis.



Regional synthesis was furthered by Hartshorn and his disciples.

Brian L. Berry, a geography attempted a more systematic approach to regional synthesis. He created a series of matrices each representing a 'slice of time'. Each matrix combined descriptions of the various fields of geography across regions, thus enabling comparative studies.

Regional synthesis has not been successful in progressing very far, inspite of recent efforts of American and British geographers because

- ① It requires involvement of experts of various disciplines which makes it difficult to implement
- ② Tension between analytical and narrative techniques of geography
- ③ Difficulty in precise demarcation of regions
- ④ Attempts at synthesising various physical and cultural aspects is difficult and leads to overgeneralisation.

5b) Humanism is that approach which studies human awareness, human consciousness and human creativity. It attempts to understand man in his environment through a purely subjective approach. It was the geographer Kirk ^{who} ~~to~~ advocated this approach first. The human approach initially emerged in the 1970s as a criticism of positivism and quantification in geography. Humanists are opposed to the treatment of space as a mere geometrical concept of surface. In the 1980s this approach moved away from its attack on positivism to a criticism of Marxism. According to Majid Husain, the human approach attempts to explain the world as it was before scientific inquiry. Critics of humanism have said that no conclusion can be drawn from this approach as it can never be ascertained if it is correct. This approach is at best a criticism as it does not offer any alternative solution.

In comparison, welfare approach in geography deals with issues related to inequality.

Though it was also a major reaction to quantitative and model building approaches of the 1960s, it concerns itself with the emergence of issues like poverty, hunger, crime, discrimination etc.

This approach attempts to describe 'who gets what, how and where; ~~where~~

The 'who' refers to any subdivision of population 'what' refers to various facilities; 'how' refers to the inequalities of distribution and 'where' to the different standards of living in different locations. *

In his book 'Human Geography: A welfare approach', D.M. Smith attempted to analyse how the various socio-political entities of our time operate.

The welfare approach is a multidisciplinary approach and needs to be merged with studies from different subjects

5c) Energy Crisis

Today's world is largely dependant on the petroleum industry for its supply of energy, be it automobiles, industries or domestic usage. A vast majority of the world's oil and gas supplies are concentrated in the strife ridden Middle East. In the past few years, the world has seen very large fluctuations in oil prices, from around 60\$ per barrel to even as high as 120\$ per barrel. This can be attributed to not just inflation and rise of prices but also geo-political issues.

Additionally, much of the 'easy' oil and gas has been produced. The remaining reserves of oil and gas are hard to extract and equally expensive to extract.

This adds an additional element of volatility.

Our world's fast depleting reserves of this commodity, coupled with a geometrical growth in demand has put us on the brink of a major energy crisis.

This effect has already begun manifesting itself in the developing countries. These countries are mostly poor in resources of petroleum and rely heavily on imports to satisfy their energy needs. They feel the brunt of the high prices. They are already starting to feel energy shortfalls, which have hampered their growth to a large extent.

Studies have shown that India's growth in GDP could have been significantly higher if we did not face energy deficiency.

There is thus an urgent need to begin developing and harnessing alternative sources of energy. Coal can be a significant provider if we can upgrade the technology to make it more efficient as well as environment friendly. Alternate technologies for generation of power through nuclear, hydro, solar, wind, tidal etc need to be developed to make them more efficient as well as economically feasible.

5d) Food Security is considered among the top problems that we will potentially face on a global scale in the near future if the state of matters are left as they are. This refers to the ability of a country to be able to feed its population a prescribed minimum quantity of food required for survival.

Populations across the globe, especially in developing countries continue to grow at exponential rates. On the other hand, productivity of food crops from major producers like USA, China, Japan, India, etc have remain stagnant since around a decade, after an initial surge in production.

Added to this, is the reduction in area under agriculture due to changing land use.

Frequent droughts and insect blights have also caused decline in food production. All of these factors have contributed to a growing concern among all nations of the

potential shortfall of food in the near future. The UN World Food Program has estimated that 50% of the available food goes to 25% of the world's population while the remaining 75% share the remaining 50%. This indicates large variances in relative levels of food scarcity among nations. It is the developing nations, especially South & South East Asia and African countries that suffer the most.

Immediate action is required to combat this threat. An analysis of productivity shows a great potential to increase production. Though the world average is around 2.8 tonnes/hectare it ranges from 1.8 tonnes/hectare in Japan to 0.8 tonnes/hectare in Nigeria. Closing this gap through simple technology transfer can go a long way in doubling ~~the~~ or even tripling food production.

Lifestyles in developed countries should also be modified from one of wasteful consumption to a more sustainable one.

5e) Famine is defined as the acute shortage of food, where a vast majority of the population does not get even a meal of food per day. Famine is most pronounced in under-developed or developing countries who are unable for whatsoever reasons to fulfil the shortage of food. The highest incidences of famine are seen in the Sahel region of Africa. Recently the 'Horn of Africa' or countries like Somalia, Eritrea and Ethiopia have been declared as famine zones by the UN World Food Program.

The ~~most common~~ obvious cause of famine in a particular region is failure of crops. This can be caused by a number of reasons, the most common being drought. The recent famine in the 'Horn of Africa' is drought. However drought and failure of crops does not always lead to famine. It occurs when the local government is not able to procure additional food to make up for the shortfall. Additional causes of ~~famine~~ ^{crop failure} are insect

and pest blights, civil and other wars, poor government policies (i.e. not ϕ citizen friendly).

The most drastic effect of famine is death of large population either caused directly by starvation or diseases.

Malnourishment is a common occurrence among the entire population suffering. The worst effected are the old and children.

Famine can be quite efficiently prevented even though crop failures caused by natural disasters may not. Proper planning in advance by the government, creation of buffer stocks, enabling timely assistance to the effected population, identifying potential problematic areas in advance and monitoring of the situation are some remedies.

Global programs of aid like the UN Food Program are quite effective in preventing famine too.

6a) Areal differentiation is that approach in geography which deals with the study of the spatial variation of physical and cultural phenomena.

This approach was popularised by Hartshorn in his work 'The Nature of Geography'. However, it was first introduced by Ratzel in his 'Cultural concept'.

According to Hartshorn, geography is concerned with providing an accurate description of the variation across regions seen on the earth's surface. His emphasis on the regional variation led many geographers to ignore ~~by~~ inter-regional characteristics, thus equating areal differentiation with chorology or regional geography.

According to Hartshorn, areal differentiation relied on three basic concepts:-

- ① The interpretation of different phenomena are directly tied to the earth.
- ② the variation of the character of these phenomena across different regions.
- ③ The areal expression of these phenomena.

However in the 1960s with the popularisation of quantification in geography, the study of regional geography diminished.

It was once again revived during the 1980s. Its revival owes its basis to the following reasons:-

- ① Popularisation of the humanistic approach where in the focus was on human consciousness and human creativity. This approach linked the study of landscapes to their social and historical concept. This led to a growing interest in the links between social and cultural aspects of various regions.
- ② Analysis of development disparities and spatial variation of well being as enshrined

in the welfare approach --

③ The growing importance of sociology in Human Geography.

Areal Differentiation is a dynamic ever-changing approach. This is due to the intrinsically dynamic nature of regional demarcation. Regions are no longer the isolated fixed entities that they used to be. Their boundaries and their influences on each other are ever changing.

Some of the criticisms of this approach in Geography are:-

① Demarcation of regions is not as straightforward as made out to be. Regions are not isolated entities. Even though two regions may be locationally isolated, they may have

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a large influence on the culture of each other.

② This approach does not help in making effective generalisations or in building universal laws or principles.

③ Regions are not isolated entities but rather they are products of interactions with neighboring regions

④ According to Prof. Mishra, in a developing country like India, this approach does not work due to various problems like lopsided development, dual economies, etc.

However in spite of the criticisms, Areal differentiation is a strong tool in the study of geographical phenomena related to spatial variation.

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6(b) Limits to Growth is a report written by the 'Club of Rome' in 1977. This is a group of intellectuals. The report questions unchecked high growth rates fuelled by wasteful high consumption lifestyles. It states that such growth is at the expense of over-exploitation of natural resources.

Rich developed countries are the ones with such high growth wasteful economies. The ones effected though are the developing countries. It is their natural resources that are depleted to fuel the lifestyles of the developed and high growth of the developed economies. This is due to the fact that developing countries export mainly raw materials due to poor industrialisation. Poor technological advancements in these economies also means that natural resources are not efficiently harvested thus leading to rapid degradation.

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The report calls for a need ~~for~~ towards a more sustainable development approach to growth rates.

It is not sufficient that developed countries are concerned about only their natural environment, as ecological degradation does not honor artificial boundaries of state.

Following this report, Prof. J. Forrester created a model to demonstrate the limits to growth. In his model he made the following assumptions:-

- ① Finite stock of non-renewable resources
- ② Finite availability of agricultural land
- ③ Limited ability for environment to absorb pollution
- ④ Limited agricultural productivity
- ⑤ Unchecked growth in population, pollution, industrialisation and growth rates.

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was on the basis of the above assumptions. This run terminated with depletion of resources, unchecked pollution and mortality. Consecutive runs used technology to solve the problems of previous runs and enhance growth. However all of the runs (totalling 7) eventually crashed. ~~or~~ This shows the limited capability of unchecked growth.

This model has been criticised for the following

- ① Treats the world as a single entity ignoring developmental and cultural disparities
- ② Limited capability of computer simulation to mimic real world
- ③ Based on limited empirical data from few locations

However in spite of its limitations, the model gives us a good picture of what current wasteful growth patterns will result in.

It makes a strong case for the world as a whole to adopt sustainable development practices.

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8a) The economic development of a country is in general estimated by its per capita income. High per capita income countries are generally considered to be 'developed'. The countries of the world may be classified into the following 4 development classes:-

- (1) Developed or Industrial-Commercial countries
- (2) Semi-developed or Industrial-Agricultural countries
- (3) Under-Developed / Developing or Agricultural countries
- (4) Centrally Planned Economies.

The salient characteristics of these economies are described below:-

(1) Developed Economies

These are characterised by very high per capita income levels. Savings levels are very high, thus reinvestment fuels high growth rates. The standards of living in these countries are ~~per~~ high. The economy of

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these countries are mainly based on industry and tertiary sector commercial activities. Less than 20% of the population is involved in agricultural activities due to high levels of mechanisation.

These countries have low population growth rates.

Most of West Europe, USA, Canada, Australia, New Zealand, Russia, ^{Japan} and some eastern bloc countries and South Africa fall into this category.

(2) Semi-developed countries

These countries have high per capita income too, though not as high as the developed countries. These countries have most of the characteristics of developed countries, but a higher % of population (35%) is involved in agricultural activities.

These countries include Venezuela, Cuba, Argentina, South Asian (Asian Tiger) countries.

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(3) Under developed economies.

Of late, the more politically correct term 'Developing economies' is in usage in common parlance. In these countries, 60-70% of the population is involved in agriculture. These countries have low per capita income, low growth rates, high population growth rates, poor/low levels of standards of living. All of Africa except S. Africa, all of Asia except Russia, Japan and the 'Asia tigers', all of E. Central & S. America excepting a few countries mentioned previously fall in this category.

(4) Centrally planned economies

In these countries, the entire economy is under government/central control. These economies are generally concentrated on base industries like iron & steel, manufacturing, power generation, etc. Luxury goods are

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rarely produced except for export-purposes. Examples of these economies are China, many of the erstwhile USSR countries.

Areas

A variety of problems exist today in regards to economic development across the globe. Most of these stem from an acute development disparity between regions. Most of the developed countries lie in the Northern Hemisphere while most of the under-developed countries lie in the Southern Hemisphere. This has given rise to what is commonly known as the 'North-South' divide.

The developed countries command most of the world trade, even though their % of population of total is small. 70% of world trade is contributed by about 25% of the world population. These

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economies are driven by wasteful consumption which has led to degradation and depletion of natural resources in the under-developed economies, which are the main sources of raw material.

Poor technologies and industrial advancement in the under developed economies has exacerbated this problem. Under developed economies very often face calamities like famine, bank-ruptcy due to inability to cope with high world inflation.

Lack of trust of under-developed economies in the erst-while colonial powers has the effect of preventing help inflow from the developed to the under developed countries.

Only a strong drive to bring about more balanced development in a sustainable manner through technology and financial aid transfers can begin to mitigate these problems.

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8b) Dicto 'Dichotomy' or 'Dualism' literally means consisting of two parts. Like its sister

disciplines, geography too consists of a number of different dichotomies.

Dualism in geography can be traced back to the early Arab and Greek geographers who studied varying aspects of geography.

Some of the dualisms in geography are explained below:-

(1) Dualism between Regional and General Geography: Bernhard Varenius was the first geographer to divide the subject into general and regional geography. According to him, general or universal geography is concerned with formulation of general laws and principles about various phenomena, whereas Special or Particular (Regional) Geography is concerned with studying phenomena of a particular region or countries. Following him various other geographers put forth

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their views on this particular dichotomy. These included Humboldt, Carl Ritter, Rihl, Vidal la Blanche, Berry, etc.

(2) Physical Geography and Human Geography

This dichotomy started with the Greeks. Hecataeus studied Physical geography while Herodotus and Strabo concentrated on human geography. Venenius further brought out the differences between the two.

Physical geography lends itself suitable to methods of natural sciences, which are not useful in Human Geography. Various authors have argued that this dichotomy is an essential one in the study of the discipline.

(3) Determinism and Possibilism

Deterministic approach is based on the principle that the natural environment dictates the pattern or way of life of people. whereas Possibilism is based on the approach that the environment is passive and man

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actively modifies it ~~to~~ to suit himself.

Determinism was the philosophy followed by early Greek, Arab and Roman philosophers. ~~Also~~

All French geographers on the other hand subscribe to the possibilistic approach.

(4) Historical and Contemporary Geography

Historical geography studies regions as they existed in the past, while contemporary geography studies the areal differentiation of regions as they exist today.

Though some geographers consider this dichotomy baseless, as what exists today will eventually pass into the realm of history; yet it is mostly agreed that these two must be studied separately and as support to each other.

(5) Functional and Formal Geography

This dichotomy divides geography into geography of real places (functional regions)

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and geography of geometric places in black and white (formal regions)

Functional regions have a cause-effect relationship between its various features.

Formal regions are homogenous regions formed by social groups or societies.

All these dichotomies and dualisms in geography ~~can~~ should not be considered to be contradictory to each other. Rather they should be studied as mutually exclusive and as ends of a continuous spectrum.

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