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Lesson Plan for (CBCS Honours) for the Academic Session 2019-2020

Type	Paper	Unit	Topic	Learning Objectives	Related Questions	Teacher	Teaching Methods
SEMESTER-I							
Discipline Core (DC) -1	DC1A Geotectonics and Geomorphology (Theory)	Part 1: Geotectonics					
		1	Earth's tectonic and structural evolution and geological time scale	A brief idea about tectonic structure will be given. Different types of plates, their working mechanism and how it evolved meaning their geological past. Students will understand the concept of geological time scale. Different divisions of geological time scale. Students will also learn about different geological units, their characteristics. Concept of modern geological time scale.	Q1. What are the different types of plate margins? Q2. What is the working principle of plate margins? Q3. What is the geological time scale? Q4. Give a brief idea about different geological divisions. Q5. What are the different geological units and their characteristics?	SP	L ICT D
		2	Earth's interior with special reference to seismology; Isostasy: theory of Airy and Pratt	In this lesson, Students will understand the internal structure of the Earth and the role of earthquake waves in this. Students will also learn the concept of Isostasy higher the crystal stability and balance will be understood by them.	Q1.What are the different layers of Earth's interior? Q2.How seismic waves help to understand the internal structural properties of the earth? Q3.What is the concept of isostasy and how Airy and Pratt explain this?	ST	ICT A/V
3	Mechanism of plate tectonics and resultant landforms, origin and types of Folds and Faults and consequent landforms	Students will understand the concept of plate tectonic, concept of plate margins and different types of landforms formed due to plate movements. They will also know about different types of fault, fold and consequent landforms formed.	Q1. Give a brief idea about plate tectonics? Q2. What are the different types of plate margins? Q3. Differentiate between convergent and divergent plate boundaries. Q4. What are the landforms formed between convergent and divergent boundaries?	PG	L D		

				Q5. Given brief description about different types of folds and faults and results of landforms due to fold and fault.		
Part 2: Geomorphology						
1	Fundamental concepts in Geomorphology	In this lesson students will gradually understand the 10 fundamental concepts of geomorphology and they will be able to apply this knowledge in the entire field of geomorphology.		Q1. What do you mean by fundamental concepts in geomorphology? Q2. What is the need of fundamental concept geomorphology? Q3. explain the term uniformitarianism.	JM	L GD
	Denudation processes (weathering, mass movement and erosion) and resultant landforms	To know about mechanism and its geomorphic importance denudational processes like weathering, mass wasting and agents of erosion.		Q1. What is weathering? Discuss the different types of weathering. Q2. Describe the processes and their mechanism of mass wasting. Q3. How do erosional agents work? Explain their erosional mechanisms and resultant landforms.	PG	L
	Models on landscape evolution: Views of Davis, Penck, King and Hack	In this lesson students will understand the evolution and development of land forms and landscape. Students will also be able to understand the various theories that explain the evolution and development of landscape and also differentiate among the theories.		Q1.what do you know about landscape evolution? Q2. How does Davis define landscape evolution? Q3. compare and contrast among the theories of landscape evolution.	ST	L PPT
2	Development of river network and landforms on uniclinal and folded structures; slope development and evolution of slope (Davis and King)	Students will understand the process of river network development and different types of landforms developed during river network development. They will understand the process of developments of folded and uniclinal structures. From this lesson, students will understand the concept of slopes and different types of slopes. They will also learn about the theory of evolution of slope given by Davis and King. And also learn about the		Q1 What is the process of river network development? Q2 What are the significant landforms formed during river network development? Q3 What is the process of development of folded structure? Q4. What is the process of development of uniclinal structure? Q5. What are the different types of slopes? Q6. Give the concept of slope development as proposed by Davis and King.	SP	L ICT

			difference between the ideas of Davis and King.	Q7. What is the difference between the concept of Davis and King?		
	3	Surface and subsurface flow in Karst region, fluvial processes and landforms.	To know about the mechanism of fluvial and karst processes. To understand the geomorphic impacts of fluvial and karst processes.	Q1. Discuss the different processes and landforms of the river.	SG	L
		Glacial and fluvio-glacial processes and landforms, aeolian and fluvial-aeolian processes and landforms	To understand the geomorphic impacts of fluvial, aeolian, glacial and karst processes.	Q1. Describe the characteristics and mechanism of landforms produced by glacial and fluvio-glacial processes, aeolian and fluvial-aeolian processes.	DM	L
DC1B: (List of Practical)	1	Relief profile analysis (representative profile, serial, composite, superimposed, projected, long and cross profile)	Students will understand the process of doing topographic cross-section and drawing profiles based on which they will be able to understand and identify the landforms as well as the application of such profiles.	Q. Draw a representative profile of the given toposheet and identify major physiographic divisions. Q2. Draw four consecutive serial profiles and prepare superimposed, projected and composite profiles using them. Also mention the applications.	ST	Pr D H/O
	2	Geological maps: Horizontal, Uniclinal and Folded structures	1.Students will develop a deep understanding of the Earth's internal structure, including the composition of the Earth's crust, mantle, and core 2.Student will develop proficiency in reading and interpreting geological maps, including the ability to understand symbols, colours, and contour lines commonly used in geological cartography.	Q1. From the given geological map of a specific region, identify and describe the major rock formations, fault lines, and fold structures present. Q2:Given a geological map showing various structural features such as anticlines and synclines, analyze the structural characteristics and propose potential tectonic forces responsible for their formation.	PG	D Pr
	3	Identification of rocks and minerals (megascopic) (Basalt, granite, gneiss, sandstone, quartzite, limestone, mica, talc, calcite and feldspar)	Students will learn about minerals and they will also learn about different types of rocks. They are in the process of forming their characteristics. Students will also know about different types of minerals and rocks and their characteristics Demonstration of Rocks and Minerals and how to identify them based on	Q1. What is mineral? Q2. What is rock, what are the different types of Rock what is sedimentary rock, what is Metamorphic rock and what is the process of evolution of the sedimentary igneous and Metamorphic rock and its characteristics. Q3. Identify different types of Rocks and Minerals and prepare laboratory notebooks	SP	L D

				their colour, hardness, and other special characteristics will also be demonstrated.	displaying their characteristics and method for identification.		
Discipline Core (DC) -2	DC2A Cartographic Techniques (Theory)	1	Concept and application of scale: Plain, comparative, diagonal and Positive Vernier	<p>Students learn about the concept of Map scale. They will also learn about different types of scale or classification of scale.</p> <p>They will learn about the concept of statement scale, ratio scale, graphical scale, their characteristics, uses and advantages and limitations.</p> <p>Description and classification of graphical scales such as plane scale, comparative diagonal and vernier scale are also given to them.</p> <p>They will learn about the advantages and limitations of simple linear scale, comparative linear scale diagonal scale and positive vernier scale.</p>	<p>Q1. What is a map scale?</p> <p>Q2. What are the different types of map scale?</p> <p>Q3. What is the ratio scale statement scale and graphical scale?</p> <p>Q4. What are the advantages of graphical scale over statement scale and ratio scale?</p> <p>Q5. What is a simple linear scale and a comparative linear scale?</p> <p>Q6. What is diagonal skill and vernier scale?</p> <p>Q7. Define vernier constant.</p> <p>Q8. What is least count?</p> <p>Q9. What are the area of uses of simple linear scale comparative skill diagonal scale and vernier scale.</p> <p>Q10. What are the advantages of diagonal and vernier scale over linear scale?</p>	SP	L D H/O
		2	Coordinate systems and Map: Grid, concept of geoid, spheroid, rectangular and geographical coordinate system, concept of map, classification of map, components of a map	<p>From this lesson, students will understand the coordinate system and the map.</p> <p>They will also learn about the basic components and characteristics of Map and how maps are made. In this lesson, they will also understand the use of grid and coordinate.</p> <p>In this lesson students will have the idea of the shape of earth in comparison to different geometrical forms.</p>	<p>Q1.What do you know about the coordinate system? How is it used in maps and in practical life?</p> <p>Q2.Define the concept of grid and describe the use of it in a map.</p> <p>Q3.Which geometric figure describes the shape of the Earth? compare among them.</p>	ST	ICT D
		3	Bearing: Magnetic and true, whole-circle and quadrantal	Students will learn about the basic concept of bearing and its types and calculation.	<p>Q1. What is bearing and its types?</p> <p>Q2. Differentiate between WCB and reduced bearing?</p> <p>Q3. Conversion of WCB to reduced bearing and reduced bearing to WCB.</p>	PG	L

		4	Map projections: Classification, properties and uses; Concept and significance of UTM projection.	Student students will understand the concept of map projection and use of different types of map projection in the field of cartography. They will also gain the knowledge of principles of construction of those map projections.	Q1.define map projection. What are the different types of my projection? Q2.describe the principle of different map projections and specific use of each of them. Q3.What is UTM Projection and where is it used?	AR	D ICT Pr
		5	Basic concepts of surveying and leveling: Prismatic compass, Dumpy level, theodolite, Abney level and Clinometer.	From this lesson, students will know the concept of surveying and leveling. They will also understand the application of surveying and the instruments that are used in field surveys. They will also be able to differentiate the uses of different survey instruments.	Q1. Define surveying and differentiate between surveying and levelling. Q2. Describe the mechanisms and principles of uses of Prismatic compass, Dumpy level, theodolite, Abney level and Clinometer.	ST	L D
		6	Survey of India topographical maps: Reference scheme of old and open series. Information on the margin of maps	From this lesson, students will know how to read the map.Using the topographical,students can see why something is where they are.They can see how people have adapted to the physical characteristics of a particular location.	Q What is an open series map. difference between old series map and open series map. Q.which organisation has developed the topographical map.	DM	L D
	DC2B: (List of Practical)	1	Scale conversion: Statement, RF, Graphical (Linear, Diagonal, Positive vernier; enlargement and reduction of scale)	Students will learn about the concept of scale conversion and need for conversion. A demonstration of statement scale to representative fractional scale or RF scale conversion and vice versa will be given to them. Demonstration of construction or process of construction of simple linear scale, comparative linear scale diagonal scale and positive vernier scale will be given to them.	Q1. How to convert statement scale to RF scale and RF scale to statement scale? Q2. What is the process of construction of simple linear scale comparative linear scale diagonal scale and positive vernier scale?	SP	Pr H/O
		2	Construction of projections: Polar Zenithal Stereographic, Simple	Student will learn the process of construction of the projections	1.Draw a Bonne's projection with 4 degree to 40 degree lat. 40 to 80 E. Rf 1:100000 interval 4 degree	JM	D Pr

			conical with standard parallels, Bonne's, Cylindrical Equal Area and Mercator's	Students will gain the knowledge of use of these projections in mapmaking.		
		3	Surveying: Prismatic compass (closed traverse), dumpy level (along a line), and theodolite (base accessible and inaccessible with same vertical plain)	From this lesson, students will know the concept of surveying and leveling. They will also understand the use of surveys and operations in field surveys. They will also be able to differentiate the uses of different survey instruments.	Q1. What is surveying? Q2. What are the different types of surveying techniques? Q3. What is the difference between surveying and leveling? Q4. What are the principles of Prismatic compass dumpy level and theodolite survey? Q5. What is RL and benchmark?	ST D H/O Pr

Type	Paper	Unit	Topic	Learning Objectives	Related Questions	Teacher	Teaching Methods
SEMESTER-II							
Discipline Core (DC) -3	DC3A Population and Settlement Geography (Theory)	1	Definition, scope and contents of Population Geography. Source of population Data	In this lesson, students will understand the scope and content of population, geography and the need of studying population in geography. They will also understand the different sources of population data.	Q1. Define population geography. Describe the scope and content of operation geography. What is the difference between population, geography and demography? Q2. What do you mean by population data and what are the different sources of population data? Why is population data important?	AR	L
		2	Components of population change... Demographic Transition Theory	Students read and understand the concept and nature and various dimensions of population change. They will also understand the cycle of population change and the demographic transition with the help of demographic transition theory	Q1. What do you understand about population change and what are the different factors of population change?? Q2. What is demographic transition and how demographic transition theory explains the population transition of any country?	JM	L D

		3	Population distribution and density....Population Policy	Students will learn about the basic concept of population and its spatial distribution through various types of densities.	Q1. What are the different types of population densities? Q2. Why does population distribution vary across space?	AR	L
		1	Definition, scope and contents of Settlement Geography	Students will be able to understand the concept of human settlement and what is the scope and content of settlement geography and where settlement Geography falls in the domain of women's geography.	Q1. Define human settlement, how the settlements are grown? Q2. Describe the scope and content of settlement geography in the light of human geography.	ST	L ICT
		2	Nature and characteristics of rural settlements, Morpho....	students will be able to categorise the settlements into rural and urban settlements. They will also be able to understand the characteristics of rural settlements, their types and patterns and morphological structures both internal and external.	Q1. Define rural settlement. What are the basic characteristics of it? Q2. What do you know about rural settlement morphology? Describe the different types and patterns of rural settlements found in different parts of India.	ST	L ICT
		3	Census definition (Temporal) and categories	students will learn the characteristics of urban settlement and the census criteria defining urban settlement in India. Students will also be able to classify urban settlements in terms of size and function.	Q1. Define urban settlement: what are the characteristics of urban settlement? Q2. How does the census of India categorise urban settlement? Q3. Classify urban settlements in terms of its function and size.	ST	L ICT
	DC3B: (Practical)	1	Population data analysis: Decadal growth, population density and Age-sex pyramid.	1. To define and explain fundamental demographic concepts of population distribution and growth, like decadal growth rate Density of population, 2. To calculate and interpret basic demographic measures i.e. Growth rate, density of population (arithmetic, agricultural), and population pyramid. 3. Identify demographic trends and make predictions based on population pyramid shapes.	Q1. Calculate the decadal growth rate for a given population using the formula. Explain the significance of this rate in understanding population dynamics. Q2. Draw age-sex pyramid of population of the given region. Q3. Analyse an age-sex pyramid and interpret the population structure. Q4. Discuss the implications of a pyramid with a wide or narrow base.	AR	L Pr
		2	Spatial Distribution and Interactions: Nearest-Neighbour Analysis (Clerk and Evans) and Rank-Size Rule (Zipf)	Students will be able to understand the special distribution and pattern of rural settlements. They will also be able to measure the special distribution pattern of rural settlements from the map and interpret accordingly.	Q.1 What are the techniques of representation of spatial distribution and interaction? Q2. What is the Nearest Neighbour Index and how does it work?	ST	D H/O Pr

					Q3. Explain with example the principle of the Rank Size Rule?		
Discipline Core (DC) -4	DC4A Cartograms and Thematic Mapping (Theory)	1	Concepts of rounding, scientific notation, logarithm and antilogarithm, natural and log scales.	Students will learn about the concept of rounding and they will also know about different rules of rounding. Students will be able to understand the concept of scientific notation and how to use them. What are the different types of scientific notations? A concept of logarithm antilogarithm and natural log scale will give into them what the uses of log scale and antilog scale will be demonstrated to them along with a few examples.	Q1. What is rounding and what are the needs of rounding? Q2. What are the rules of rounding? Q3. What are scientific notations and why is scientific notation required? Q4. Given brief idea about logarithm and antilogarithm. Q5. What are the natural and log scales?	SP	L
		2	Concept, use,geographical data: Line, Bar, Dot and Sphere, Proportional circles, Isopleths and choropleth	Students will learn about geographical data. Need and sources of geographical data different methods of Representation of geographical data. They will also learn about different representation methods of Geographical data such as Line, Bar, Dot and Sphere, Proportional circles, Isopleths and choropleth. an idea about required data uses advantages and limitations of said cartography techniques will be given to them.	Q1. What is geographical data? What are the sources of geographical data and difference between geographical data and other types of data? Q2. Given a brief description about different types of cartographic techniques, their uses, advantages and limitations.	SP	L ICT
		3	Preparation and interpretation...: maps, climatological maps, Land Use/land cover maps and Thematic Maps	Students will learn about the basic concept of map and its types, importance of climatological map, difference between LULC and thematic map and its types.	Q1. What are maps and their types? Q2. Importance of climatological map. Q3. What is thematic map and their types? Q4. What are the importance of thematic maps?	PG	L
		4	Application of GIS in thematic mapping, concept of Cadastral Map.	students will learn it applies to spatial features.on the other hand a thematic map of the U.S showing about the states and help answer questions about those locations.	Q1.What is a thematic map.what are the three most important types of thematic map. Q2. what the thematic dimensions of GIS.	PG	
	DC4B: Practical	1	Cartograms: Proportional squares, pie diagram, proportional divided circle, dots and spheres	Students will learn about the process of construction of Pie diagrams. In demonstration to prepare proportional divided circle will be given to them	Q1. What type of data is required for dot Pie diagrams? Q2. What is the difference between proportional by and divided circle?	SP	Pr D

			For construction of dot and sphere diagrams they will learn about how to construct it and also proper representation of dot and sphere diagrams along with a map will be given to them.	Q3. What is a graphical scale? Q4. How to prepare a graphical scale for a proportional divided circle and sphere diagram?		
	2	Preparation of thematic maps: Choropleth, Isoline and Chorochromatic map	Students will learn about the basic concept of thematic map and its types, importance of Choropleth, Isoline and Chorochromatic map.	Q1. What is a thematic map? Q2. What are the importances of Choropleth, Isoline and Chorochromatic map	PG	Pr L

Note: L= Lecture, D= Demonstration, ICT= Information and Communication Technology, A/V= Audio visual, PPT= Powerpoint, H/O= Hands on, Pr= Practical
ST = Sayfujjaman Tarafder SP = Satyajit Paul DM= Dipankar Majumder AR = Avijit Roy PG = Paban Ghosh SG = Sanjay Ghosh JM = Jayanta Mondal



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