

GCM01S : Heavenly Bodies

HEAVENLY BODIES

HEAVENLY BODIES

NORTHERN HEAVEN **SOUTHERN HEAVEN**

CONSTELLATIONS

TYPES OF GALAXIES

OUR SOLAR SYSTEM

GCM02S : Solar System

SOLAR SYSTEM

SOLAR SYSTEM

ORBITS OF THE PLANETS

PLANETS

FACTS ABOUT EARTH

GCM03S : Earth & Its Motions

EARTH & ITS MOTIONS

EARTH & ITS MOTIONS

TWO MOTIONS OF THE EARTH

Seasons are caused due to Revolution

Day & Night caused due to Rotation

SOLAR ECLIPSE

LUNAR ECLIPSE

OCEAN TIDES

THE EARTH IS ROUND

FACTS ABOUT EARTH

LATITUDES AND LONGITUDES

PHASES OF MOON

WORLD CLOCK

GCM04S : Structure of the Earth

STRUCTURE OF THE EARTH

INTERNAL STRUCTURE

SEISMIC TECHNIQUES

WEGENER'S THEORY OF CONTINENTAL DRIFT

SURFACE STRUCTURE

LANDFORMS

MAP OF EARTHQUAKES

VOLCANO

MAP OF VOLCANOES

SEISMOMETER

TYPES OF VOLCANOES

GCM05S : Rocks & Minerals

ROCKS & MINERALS

ROCKS RELATED TO PLATE TECTONICS

ROCKS

ROCK CYCLE

MINERALS

GCM06S : Atmosphere And Space

ATMOSPHERE AND SPACE

THE ATMOSPHERE IS A THICK LAYER OF AIR THAT ENVELOPES THE EARTH'S SURFACE.

ORIGIN OF EARTH'S ATMOSPHERE

VAN ALLEN RADIATION BELT

Distribution of Solar Energy Through The Atmosphere

Variations in Atmospheric pressure & temperature

GCM07S : Pressure & Winds

PRESSURE & WINDS

PRESSURE

WINDS

WINDS

WINDS

GCM08S : Weather Map Symbols

WEATHER MAP SYMBOLS

CLOUD COVER

WIND CONDITIONS

WEATHER CONDITIONS

SEA CONDITIONS

GCM09S : Ocean

OCEAN

Oceans are vast water bodies covering 71% of the earth's surface. They play a crucial role in regulating temperature variations & climate.

TOPOGRAPHY OF OCEAN FLOOR

The ocean floor comprises two distinct topographies: the continental shelf and slope, and the deep-sea floor. At the edge of the continental shelf, the sea bed slopes down to the abyssal plain lying at an average depth of 3600 m. Abyssal plain is divided by

ATOLL FORMATION

VERTICAL DISTRIBUTION OF OCEAN LIFE

KF CURRENT

TIDALS

OCCURRENCE OF WATER PARTICLES IN OCEAN WAVES

COASTLINE FEATURES

MAP OF OCEANIC CURRENTS

GCM10S : Surveying

SURVEYING

CHAIN AND TAPE SURVEY

METHOD OF SURVEYING

INSTRUMENTS REQUIRED

LAND MEASURING CHAIN

PLANE TABLE SURVEY

INSTRUMENTS REQUIRED

METHOD OF SURVEYING

GCM11S : Conventional Signs

CONVENTIONAL SIGNS

BOUNDARIES		RAILROADS	
COMMUNICATION & POWER LINES		WATER FEATURES	
SETTLEMENTS		PHYSICAL FEATURES	
VEGETATIONS		OTHERS	

GCM12S : Map Projections

MAP PROJECTIONS

Method of representing surfaces and angles from a globe on to a plane is called Map Projections. All map projections distort the surface in some fashion. Depending upon the purpose of drawing, various map projections exist which preserve some properties of the spherical body with corresponding effects.

The Developable Surface

- Cylinder
- Cone
- Plane

Lambert Equal-Area Projection

Boon Projection

Polycyclic Projection

Geometric Projection

Interrupted Goode Homolosine Projection

Albers Equal-Area Projection

Conic Equal-Area Projection

Mercator Projection

Mollweide Projection

Cylindrical Projection

Lambert's Cylindrical Equal-Area Projection

Bonaparte Projection

Orthographic Projection

GCM13S : Storm and Ocean Current

Storm and Ocean Current

Tornadoes, hurricanes and cyclones are the most violent storms of nature. They are generated by electrical storms and they take the form of powerful funnel-shaped whirlwinds that extend from the sky to the ground. In these storms, moving air is mixed with soil and other matter rotating at velocities as high as 300 miles per hour (480km/h).

Beginning of a Tornado

Rotation

Descent

The Tornado

Planet Spiral

Cyclone and Anticyclone

How Ocean Currents are Formed

Map of Oceanic Currents

Size 70 x 100 cm, Available in English only (Syn.), Available in English & Hindi Combined (Lam.)

CHARTS ON GEOGRAPHY

A set of 13 charts

LATEST GEOGRAPHY CHARTS

A set of 20 charts

Laminated, Size 50 x 75 cm (Available in English and Hindi Combined)

GCS01 : Phases of the Moon

PHASES OF THE MOON चन्द्रमा की कलाएँ

FACE OF THE MOON
The nearest of the moon that always faces the earth...

Age	4500-4600 million years (approx.)
Distance from Earth	384,400 km
Orbit around Earth	384,400 km
Time to orbit Earth	27.32 days
Time to rotate	27.32 days
Surface temperature	107°C (day), -153°C (night)
Surface gravity	1.62 m/s²
Surface area	37,932,336 km²
Volume	21,712,489 km³
Density	3.34 g/cm³
Escape velocity	2.38 km/s
Surface composition	Various minerals and rocks

GCS02 : Solar & Lunar Eclipse

SOLAR & LUNAR ECLIPSE सूर्य व चन्द्र ग्रहण

Solar Eclipse
Occurs when the Moon passes between the Sun and Earth, blocking the Sun's light.

Lunar Eclipse
Occurs when the Earth passes between the Sun and Moon, blocking the Sun's light from reaching the Moon.

GCS03 : Seasons

SEASONS ऋतु परिवर्तन

Seasons
Spring, Summer, Autumn, Winter

Season	Month	Temperature	Daylight
Spring	March, April, May	Warm	Increasing
Summer	June, July, August	Hot	Maximum
Autumn	September, October, November	Cool	Decreasing
Winter	December, January, February	Cold	Minimum

GCS04 : Tides

TIDES ज्वार भाटा

Spring Tides
Occur when the Sun, Moon, and Earth are in a straight line, resulting in high and low tides.

Neap Tides
Occur when the Sun and Moon are at right angles to each other, resulting in moderate tides.

GCS05 : Sun and Planets

SUN AND PLANETS सूर्य तथा ग्रह

Structure of Sun
Core, Radiative Zone, Convective Zone, Photosphere, Chromosphere, Corona

Planet	Distance from Sun (km)	Orbit (days)	Temperature (°C)
Mercury	57,909,175	88	167
Venus	108,208,460	225	464
Earth	149,597,870	365	15
Mars	227,939,200	687	-63
Jupiter	778,547,000	4,333	-108
Saturn	1,429,400,000	9,453	-178
Uranus	2,870,974,000	29,450	-216
Neptune	4,504,000,000	59,800	-214

GCS06 : Water Cycle in Nature

WATER CYCLE IN NATURE प्रकृति में जल चक्र

Water Cycle
Evaporation, Condensation, Precipitation, Infiltration, Runoff

GCS07 : Directions and How to Find Them

DIRECTIONS AND HOW TO FIND THEM दिशाओं का ज्ञान

Directions
North, South, East, West, North-East, South-East, North-West, South-West

How to Find Them
Using a compass, a watch, and the sun.

GCS08 : Conventional Signs

CONVENTIONAL SIGNS रुढ़िगत संकेत

Conventional Signs
Buildings, Trees, Roads, Rivers, etc.

GCS09 : Earth is Round

Earth Is Round पृथ्वी गोल है

This chart explains the evidence for Earth's roundness. It includes:

- Observations of the horizon from a ship's deck.
- The shadow of a gnomon on a sundial.
- The Earth's shadow on the Moon during a lunar eclipse.
- The curvature of the Earth as seen from space.
- Experiments with a globe and a string.

GCS10 : Physical Features of Earth

PHYSICAL FEATURES OF EARTH पृथ्वी के भौतिक लक्षण

This chart identifies major physical features of India:

- Mountains:** Himalayas, Aravalli, Western Ghats, Eastern Ghats.
- Interior Plains:** Deccan Plateau, Indo-Gangetic Plain.
- Coastal Plains:** Malabar Coast, Coromandel Coast.
- Ocean:** Arabian Sea, Bay of Bengal, Indian Ocean.
- Water Bodies:** Rivers (Ganga, Brahmaputra, etc.), Lakes (Wular, Sambhar, etc.), and Islands (Andaman, Nicobar).

GCS11 : Day & Night

DAY & NIGHT दिन और रात

This chart explains the day and night cycle:

- Spinning Earth:** Earth rotates on its axis.
- Daylight Duration:** Shows how the length of day and night varies with latitude.
- World Standard Time Zone Map:** A map showing different time zones across the world.
- Aurora:** Shows the aurora borealis and aurora australis.

GCS12 : Earthquake

Earthquake भूकम्प

This chart details earthquakes:

- Causes of Earthquake:** Elastic Rebound Theory and Volcanic Earthquake.
- Earthquake Waves:** P-waves, S-waves, and Surface waves.
- Effects of Earthquake:** Ground shaking, landslides, tsunamis, and building damage.

GCS13 : Latitude and Longitude

Latitude and Longitude

This chart explains the coordinate system:

- Parallels of Latitude:** Lines of equal distance from the equator.
- Meridians of Longitude:** Lines of equal distance from the Prime Meridian.
- Important Latitudes & Longitudes:** Tropic of Cancer, Tropic of Capricorn, etc.
- Standard Time:** How time zones are determined.
- International Date Line:** The line where the date changes.

GCS14 : Types of Clouds

Types of Clouds मेघों के प्रकार

This chart identifies different cloud types:

- High Clouds:** Cirrus, Cirrostratus, Altostratus, Altimax.
- Medium Clouds:** Nimbostratus, Altostratus.
- Low Clouds:** Stratocumulus, Stratocumulus, Stratocumulus.
- Other Clouds:** Cumulus, Cumulonimbus, Cirrus, etc.

GCS15 : Hill Features, Contours & Map Setting

HILL FEATURES, CONTOURS & MAP SETTING

This chart covers map features:

- Hill Features:** Summit, slope, depression, etc.
- Contours:** How contour lines represent elevation.
- MAP SETTING:** How to orient a map using a magnetic compass.

GCS16 : Factors That Affect Climate

Factors That Affect Climate जलवायु को प्रभावित करते कारक

This chart lists factors affecting climate:

- Latitude:** Distance from the equator.
- Winds & Air Masses:** How wind direction and air mass origin affect climate.
- Distance from Water Bodies:** How proximity to oceans or lakes moderates climate.
- Altitude:** How elevation affects temperature and precipitation.
- Map Setting:** How map orientation affects climate analysis.

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GCS17 : Weather Instruments

WEATHER INSTRUMENTS

Wind Vane: Shows the direction of the wind.

Anemometer: Measures the wind speed.

Barometer: Measures the atmospheric pressure.

Rain Gauge: Measures the amount of rainfall.

Thermometer: Measures the temperature.

Hygrometer: Measures the relative humidity.

Psychrometer: Measures the wet-bulb temperature.

Stevenson Screen: A wooden enclosure to shield meteorological instruments from precipitation and direct heat.

Wet and Wet Bulb Thermometer: Measures the humidity.

Max. & Min. Thermometer: Records the maximum and minimum temperature.

GCS18 : Volcano

VOLCANO ज्वालामुखी

Volcanoes are vents or fissures in the Earth's crust through which magma, ash, and gases escape. They are formed by the movement of tectonic plates. The magma that rises to the surface is called lava. Volcanoes can be active, dormant, or extinct.

Structure of Volcano: Shows the internal structure including the magma chamber, vent, and crater.

Classification based on cone structure:

- Shield Volcano:** Low, broad, and gently sloping.
- Cinder Cone:** Steep-sided and conical.
- Composite Volcano:** Built up of layers of ash and lava.

Activity Based Classification:

- Active Volcano:** Currently erupting or has erupted recently.
- Dormant Volcano:** Not currently erupting but has the potential to do so.
- Extinct Volcano:** Has not erupted for a long time and is unlikely to erupt again.

Active Volcanoes of the World: A world map showing the locations of active volcanoes.

GCS19 : Ocean Currents

Ocean Currents सागरीय धाराएँ

Ocean currents are flows of water in the ocean. They are caused by differences in temperature and salinity. They play a crucial role in the Earth's climate system.

Types of Ocean Currents:

- Surface Currents:** Driven by wind and density differences.
- Deep Currents:** Driven by density differences.

Factors that Influence Ocean Currents:

- Wind
- Temperature
- Salinity
- Continental Drift
- Earth's Rotation

World Map of Ocean Currents: A world map showing the major ocean currents.

Diagram of a Gyre: Shows the circular flow of water in a basin.

Diagram of a Conveyer Belt: Shows the global circulation of water.

GCS20 : Sunlight and Rainbow

SUNLIGHT AND RAINBOW

Sunlight takes 8.3 minutes to reach the Earth. The total frequency spectrum of electromagnetic radiation given off by the Sun is called Sunlight.

Composition of Sunlight: A spectrum showing the visible light spectrum.

Sunlight on Earth: A photograph of the sun in the sky.

RAINBOW:

- Primary Rainbow:** Formed by a single reflection of light inside raindrops.
- Secondary Rainbow:** Formed by a double reflection of light inside raindrops.

Colour and Light:

- The white light from the Sun reaches the object (here apple).
- All the colours are absorbed, except the red.
- The red is the colour that we see.