

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Earth Science)
Semester: IV
Syllabus with Effect from: June - 2014

Paper Code: PT04CESC03	Total Credit: 4
Title Of Paper: Physical Geography	

Unit	Description in Detail	Weightage (%)
I	Geomorphology and climatology: Development in geomorphology. Historical and process Geomorphology. Landforms in relation to climate, rock type, structure and tectonics. Processes – weathering, pedogenesis, mass movement, erosion, transportation and deposition. Geomorphic processes and landforms – fluvial, glacial, eolian, coastal and karst. River forms and processes – stream flow, stage-discharge relationship; hydrographs and flood frequency analysis. Submarine relief. Geomorphology and topographic analysis including DEM, Environmental change– causes, effects on processes and landforms. Extra-terrestrial geomorphology; Climatology: Fundamental principles of climatology. Earth's radiation balance; latitudinal and seasonal variation of insolation, temperature, pressure, wind belts, humidity, cloud formation and precipitation, water balance. Air masses, monsoon, Jet streams, tropical cyclones, and ENSO. Classification of climates- Koppen's and Thornthwaite's scheme of classification. Climate change.	25%
II	Bio-geography: Elements of biogeography with special reference to India; environment, habitat, plant-animal association; zoo-geography of India; Biomes, elements of plant geography, distribution of forests and major plant communities. Distribution of major animal communities. Conservation of forests. Wildlife sanctuaries and parks.	25%
III	Environmental Geography: Man-land relationship. Resources-renewable and non-renewable. Natural and man-made hazards-droughts, floods, cyclones, earthquakes, landslides, tsunamis. Ecological balance, environmental pollution and deterioration.	25%
IV	Geography of India: Physiography, drainage, climate, soils and natural resources- the Himalaya, Ganga-Brahmaputra Plains, and peninsular India Precambrian shield, the Gondwana rift basins, Deccan Plateau. Indian climatology with special reference to seasonal distribution and variation of temperature, humidity, wind and precipitation; Climate zones of India. Agricultural geography of India. Population-its distribution and characteristics. Urbanization and migration. Environmental problems and issues.	25%

Basic Text & Reference Books:-

- Paul R. Bierman and David R. Montgomery, Key Concepts in Geomorphology, W. H. Freeman (2013)
- Richard Huggett, Fundamentals of Geomorphology (Fundamentals of Physical Geography), Routledge (2011)
- Michael A. Summerfield, Global Geomorphology, Routledge (1991)
- Robin Davidson-Arnott, Introduction to Coastal Processes and Geomorphology, Cambridge University Press (2010)



- Dennis L. Hartmann, Global Physical Climatology, (International Geophysics), Academic Press (1994)
- Robert V. Rohli, Anthony J. Vega, Climatology, Jones and Bartlett Publishers (2008)
- Adebayo, Williams Oluwole, Fundamental principles of climatology, Adeyemo Publishing House (2007)
- H. Robinson, Biogeography, MacDonald and Evans, London: Macdonald and Evans (1978)
- N.V. Pears, Basic Biogeography, Routledge (1985)
- Savindra Singh, Environmental Geography, Prayag Pustak Bhawan (1991)
- R. B. Singh, Environmental geography, Heritage Publishers (1990)
- Majid Husain, Geography of India, Mcgraw hill education (2014)
- R. C. Tiwari, Geography Of India, Prayag Pustak Bhawan (2010)

