

**Study Circle Career Development Institute**

## **100 Important Points : SSP**



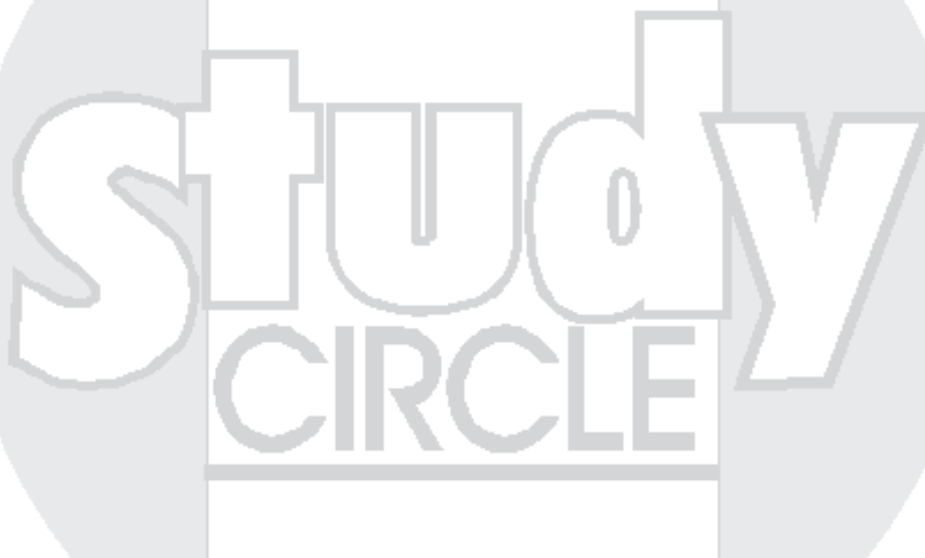
**(65) Global warming - Role of CO<sub>2</sub> and methane in greenhouse effect**

## **5) Environmental Ecology, Bio-diversity & Climate Change**

- 1) **Environmental Ecology (2)**
- 2) **Bio-diversity (2)**
- 3) **Climate Change (2)**

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- 61) Ecosystem - energy pyramid ,Food chain and webs, Material cycle
  - 62) Environmental imbalance, conservation, Summits and Mesures, EIA
  - 63) Biodiversity - concept, types, wild life and flora of India
  - 64) Sanctuaries and National Parks, Tiger Project, Environmental laws
- 65) Global warming - Role of CO<sub>2</sub> and methane in greenhouse effect**
- 66) Pollution - Air, Water, Soil, Sound.Waste management, Mitigation measures



# General Studies Paper I

- 1) **History of India and Indian National Movement (15)**
- 2) **Maharashtra, India and World Geography (15)**
- 3) **Maharashtra and India - Indian Polity and Governance (15)**
- 4) **Economic and Social development (15)**
- 5) **Environmental Ecology, Bio-diversity & Climate Change (10)**
- 6) **General Science (15)**
- 7) **Current Events of State, National and International Importance (15)**

## 1) History of India and Indian National Movement (15)

- 1) History of Ancient India (4)
- 2) History of Mediavel India (3)
- 3) History of Modern India (4)
- 4) Indian National Movement (4)

## 2) Maharashtra, India and World Geography (15)

- 1) Physical Geography of World (3)
- 2) Social Geography of World (1)
- 3) Economical Geography of World (1)
- 4) Physical Geography of India (2)
- 5) Social Geography of India (1)
- 6) Economical Geography of India (2)
- 7) Physical Geography of Maharashtra (2)
- 8) Social Geography of Maharashtra (1)
- 9) Economical Geography of Maharashtra (1)

## 3) Maharashtra and India - Indian Polity and Governance (15)

- 1) Constitution (3)
- 2) Political System (3)
- 3) Panchayati Raj & Urban Governance (3)
- 4) Public Policy (3)
- 5) Humana Rights Issues (3)

## 4) Economic and Social development (15)

- 1) Sustainable Development (2)
- 2) Poverty (2)
- 3) Inclusion (2)
- 4) Demographics (2)
- 5) Social Sector Initiatives (2)
- 6) Indian Economy - Public Finance (1)
- 7) Extrenal Trade (1)

- 8) Banking, Inflation (1)
- 9) Industry (1)
- 10) Agriculture (1)

**5) Environmental Ecology, Bio-diversity & Climate Change (6)**

- 1) Environmental Ecology (2)
- 2) Bio-diversity (2)
- 3) Climate Change (2)

**6) General Science (19)**

- 1) Physics (3)
- 2) Chemistry (3)
- 3) Biology and Zoology (2)
- 4) Botany (2)
- 5) Agriculture Science (2)
- 6) Human Biology and (2)
- 7) Health, Hygeine, Food and Nutrition (3)
- 8) ST development & its applications to Infrastructure development (2)

**7) Current Events of State, National and International Importance (15)**

- 1) Political events (2)
- 2) Organisations (2)
- 3) Economical events (2)
- 4) S & T events (2)
- 5) Geographical events, Places (2)
- 6) Sociocultural events (1)
- 7) Sports events (1)
- 8) Litearature and Days (1)
- 9) Appointments, Personalities (1)
- 10) Prizes and Honours (1)

**State Service Preliminary Examination 2024**

**Preparation & Guidance : Topics & Subtopics of the Syllabus**

**100 Important Points Environment : 65**

- 1) The impact of humans on global climate has been induced by which of the following ?  
a) Deforestation since 8000 years                      b) Use of fire and overgrazing  
c) Wet paddy cultivation since 5000 years      d) Industrial revolution

**Answer Options :**

- 1) (a) and (b) only      2) (a) and (c) only      3) (b), (c) and (d)      4) (a), (b), (c), (d)

- 2) In the context of mitigating the impending global warming due to anthropogenic emissions of carbon dioxide, which of the following can be the potential sites for carbon sequestration?  
a). Abandoned and uneconomic coal seams  
b) Depleted oil and gas reservoirs  
c) Subterranean deep saline formations

**Answer Options :**

- 1) (a) and (b) only      2) (a) and (c)      3) (b) and (c)      4) (a), (b) and (c)

- 3) Arrange the following GHGs in the increasing order their Global warming potential (GWP).  
a) Methane                      b) Carbon Dioxide                      c) Nitrous Oxide                      d) Sulfur Hexafluoride  
e) Perfluoro Carbons      f) Hydro Fluoro Carbons

Select the correct answer using the code given below.

- 1) b, a, c, f, e, d      2) a, b, c, d, e, f      3) b, c, a, d, e      4) d, b, c, a, e

- 4) With reference to Green House Gases (GHGs), consider the following statements :  
a) Green House gases are also called radiatively active gases as they absorb infrared radiation  
b) Under the process of greenhouse flux, earth radiates back energy to the atmosphere.  
c) Atmospheric lifetime of Methane is much more than Chlorofluorocarbons.

Which of the above mentioned statements is/are not correct?

- 1) (a) and (b) only      2) (a) and (c)      3) (b) and (c)      4) (a), (b) and (c)

- 5) Vehicular Emission Norms under the Bharat Stage emission standards cover which of the following pollutants?

- a) Carbon Monoxide? (CO)                      b) NO<sub>x</sub>  
c) Particular Matter (PM)                      d) Sox  
e) Hydrocarbon (HC)                      f) Ozone

Select the correct answer using the code given below.

- 1) b, a, c, f, e, d      2) a, b, c, e      3) b, c, a, d, f      4) d, b, c, a, e

- 6) Which of the following is the National Implementation entity of the Adaptation Fund set up under the Kyoto protocol of the United Nations Framework Convention on Climate Change (UNFCCC)?
- 1) National Bank for Agriculture and Rural Development (NABARD)
  - 2) National Biodiversity Authority
  - 3) NITI Aayog
  - 4) Indian Renewable Energy Development Agency (IREDA)

- 7) Which of following is/are not a part of National Action plan on Climatic Change (NAPCC)?
- a) National Bamboo mission
  - b) National Horticulture Mission
  - c) National Water Mission
  - d) National Wetland conservation programme

**Answer Options :**

- 1) (a) and (b) only      2) (a) and (c) only      3) (a), (b) and (d)      4) (a), (b), (c), (d)

- 8) 'Gadgil Committee Report' and 'Kasturirangan Committee Report', sometimes seen in the news, are related to

- 1) constitutional reforms
- 2) Ganga Action Plan
- 3) linking of rivers
- 4) protection of Western Ghats

- 9) Consider the following statements regarding Geographical Indications :

- a) They are covered under the Trade Related Aspects of Intellectual property Rights (TRIPS) Agreement.
- b) They are regulated under patents Act, 1970
- c) They are administered by Ministry of Commerce & Industry

**Answer Options :**

- 1) (a) and (b) only      2) (a) and (c)      3) (b) and (c)      4) (a), (b) and (c)

- 10) Under the ECOMARK scheme Government provides accreditation to Environment Friendly products. In this context consider the following statements :

- a) The product must have been manufactured using renewable energy resources like solar and wind energy to be labelled as ECOMARK.
- b) Central Pollution Control Board is one of the designated authorities to label a product as ECOMARK
- c) Under the scheme, government rewards natives by companies to reduce adverse environmental impact of their products. Which of the statements given above is/are correct?

**Answer Options :**

- 1) (a) and (b) only      2) (a) and (c)      3) (b) and (c)      4) (a), (b) and (c)

- 11) Study the following statements about Greenhouse gases effect.

- a) Our planet was heating at the rate of  $1^{\circ}\text{C}$  per 100 years, till 1970.
- b) Since last 20 years, the planet has been warming at the rate of  $10^{\circ}\text{C}$  per 100 years.
- c) Most of the glaciers in different parts of the world are retreating.
- d) Frequency and effect of El Nino is increasing.

**Answer Options :**

- 1) Only a and b are correct
- 2) Only c and d are correct
- 3) Only b is correct
- 4) Only a, c and d are correct

- 12) In the context of CO<sub>2</sub> emission and Global Warming, what is the name of a market driven device under the UNFCCC that allows developing countries to get funds/incentives from the developed countries to adopt better technologies that reduce greenhouse gas emissions?
- 1) Carbon Footprint
  - 2) Carbon Credit Rating
  - 3) Clean Development Mechanism
  - 4) Emission Reduction Norm

- 13) Consider the following statements :
- a) Clean Development Mechanism (CDM) in respect of carbon credits is one of the Kyoto protocol Mechanisms.
  - b) Under the CDM, the projects handled pertain only to the Annex-I countries.

**Answer Options :**

- 1) (a) only
  - 2) (b) only
  - 3) Both (a) and (b)
  - 4) Neither (a) nor (b)
- 14) The United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty drawn at
- 1) United Nations Conference on the Human Environment, Stockholm, 1972
  - 2) UN Conference on Environment and Development, Rio de Janeiro, 1992
  - 3) World Summit on Sustainable Development, Johannesburg, 2002
  - 4) UN Climate Change Conference, Copenhagen, 2009

- 15) With reference to the Agreement at the UNFCCC Meeting in Paris in 2015, which of the following statements is/are correct?
- a) The Agreement was signed by all the member countries of the UN and it will go into effect in 2017.
  - b) The Agreement aims to limit the greenhouse gas emissions so that the rise in average global temperature by the end of this century does not exceed 2 °C or even 1.5 °C above pre-industrial levels.
  - c) Developed countries acknowledged their historical responsibility in global warming and committed to donate \$ 1000 billion a year from 2020 to help developing countries to cope with climate change.

**Answer Options :**

- 1) (b) only
  - 2) (a) and (c)
  - 3) (b) and (c)
  - 4) (a), (b) and (c)
- 16) With reference to 'Global Climate Change Alliance', which of the following statements is/are correct?
- a) It is an initiative of the European Union.
  - b) It provides technical and financial support to targeted developing countries to integrate climate change into their development policies and budgets.
  - c) It is coordinated by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

**Answer Options :**

- 1) (a) and (b) only
- 2) (a) and (c)
- 3) (b) and (c)
- 4) (a), (b) and (c)

- 17) Consider the following statements :
- a) Climate and Clean Air Coalition (CCAC) to Reduce Short Lived Climate Pollutants is a unique initiative of G20 group of countries.
  - b) The CCAC focuses on methane, black carbon and hydrofluorocarbons.

**Answer Options :**

- 1) (a) only                      2) (b) only                      3) Both (a) and (b)                      4) Neither (a) nor (b)

- 18) With reference to the 'Global Alliance for Climate-Smart Agriculture (GACSA)'; which of the following statements is/are correct?
- a) GACSA is an outcome of the Climate Summit held in Paris in 2015.
  - b) Membership of GACSA does not create any binding obligations.
  - c) India was instrumental in the creation of GACSA.

**Answer Options :**

- 1) (b) only                      2) (a) and (c)                      3) (b) and (c)                      4) (a), (b) and (c)

- 19) With reference to Montreal protocol on Substances that Deplete the Ozone Layer, Consider the following statements:
- a) It proposes reduction in usage of Hydro fluorocarbons (HFCs) which have high ozone depletion potential.
  - b) Haloes used in defence sector, are exempt from Montreal protocol.
  - c) It is a protocol under the Vienna convention for the protection of Ozone layer.

**Answer Options :**

- 1) (a) and (b) only                      2) (a) and (c)                      3) (b) and (c)                      4) (a), (b) and (c)

- 20) Consider the following statements regarding 'Earth Hour' :
- a) It is an initiative of UNEP and UNESCO.
  - b) It is a movement in which the participants switch off the lights for one hour on a certain day every year.
  - c) It is a movement to raise the awareness about the climate change and the need to save the planet.

**Answer Options :**

- 1) (a) and (b) only                      2) (a) and (c)                      3) (b) and (c)                      4) (a), (b) and (c)

- 21) With reference to Montreal protocol on Substances that Deplete the Ozone Layer, Consider the following statements:
- a) It proposes reduction in usage of Hydro fluorocarbons (HFCs) which have high ozone depletion potential.
  - b) Haloes used in defence sector, are exempt from Montreal protocol.
  - c) It is a protocol under the Vienna convention for the protection of Ozone layer.

**Answer Options :**

- 1) (a) and (b) only                      2) (a) and (c)                      3) (b) and (c)                      4) (a), (b) and (c)



- 22) With reference to 'Indian Ocean Dipole (IOD)' sometimes mentioned in the news while forecasting Indian monsoon, which of the following statements is/are correct?  
a) IOD phenomenon is characterized by a difference in sea surface temperature between tropical Western Indian Ocean and tropical Eastern Pacific Ocean.  
b) An IOD phenomenon can influence an El Nino's impact on the monsoon.

**Answer Options :**

- 1) (a) only                      2) (b) only                      3) Both (a) and (b)                      4) Neither (a) nor (b)

- 23) If global temperature rises by 2°C, which of the following effects can be seen on the earth ?  
a) Annual flooding      b) Insect born disease like Malaria  
c) Shift of agricultural regions.      d) Several species of plants and animals will become extinct.

**Answer Options :**

- 1) (a) and (b) only      2) (a) and (c) only      3) (b), (c) and (d)      4) (a), (b), (c), (d)

- 24) The concept of carbon credit originated from which one of the following?

- 1) Earth Summit, Rio de Janeiro                      2) Kyoto Protocol  
3) Montreal Protocol                      4) G-8 Summit, Heiligendamm

- 25) The effects of aerosols on climate is / are

- a) They directly reflect sunlight back to space.  
b) They indirectly make clouds brighter reflectors.  
c) Aerosols have a net cooling effect on climate systems.  
d) Human generated aerosols offset the impact of global warming to some extent.  
Which of the above effects is / are true?

**Answer Options :**

- 1) Only a, b and c are true                      2) Only a and c are true  
3) Only b, c and d are true                      4) a, b, c and d are true

- 26) Which of the following statement (s) is/are correct regarding fluorinated gases?

- a) They are Ozone Depleting Substances.  
b) They are emitted during manufacture of Semiconductor components  
c) They are removed from the atmosphere through photo-decomposition.

**Answer Options :**

- 1) (a) and (b) only      2) (a) and (c)                      3) (b) and (c)                      4) (a), (b) and (c)

- 27) Which of the following are Ozone Depleting Substances (ODS)?

- a) Halons                      b) Carbon Tetrachloride  
c) Hydro chlorofluorocarbons (HCFCs)                      d) Hydro fluorocarbons (HFCs)  
e) Chlorofluorocarbons (CFCs)

**Answer Options :**

- 1) b, a, c, e, d                      2) a, b, c, e                      3) b, c, a, d, e                      4) d, b, c, a, e

- 28) Which of the following sources contribute to the formation of acid rains?

- a) Volcanic eruptions      b) Thermal power plants      c) Burning of coal      d) Automobile exhaust

**Answer Options :**

- 1) (a) and (b) only      2) (a), (b) and (c)                      3) (a), (c) and (d)                      4) (a), (b), (c), (d)

- 29) With reference to photochemical smog consider the following statements:  
a) Photochemical smog occurs in a cool, humid climate.  
b) Presence of high levels of nitric oxide is essential for formation of photochemical smog  
c) Photochemical smog is chemically an oxidizing mixture.  
**Answer Options :**  
1) (a) and (b) only      2) (a) and (c)      3) (b) and (c)      4) (a), (b) and (c)
- 30) Which one of the following is produced during the formation of photochemical smog?  
1) Hydrocarbons      2) Nitrogen Oxides      3) Ozone      4) Methane
- 31) **Assertion (A) :** Coal-based thermal power stations contribute to acid-rain.  
**Reason (R) :** Oxides of carbon are emitted when coal burns.  
1) Both A and R individually true and R is the correct explanation of A  
2) Both A and R are individually true but R is not the correct explanation of A  
3) A is true but R is false  
4) A is false but R is true
- 32) Acid precipitation is now regarded as a serious problem in some European and Asian countries. Its major cause or source is :  
1) discharge of acidic effluents onto neutral or slightly alkaline land where the acidic components precipitate  
2) emissions of sulphur oxides and nitrogen oxides from thermal power plants and burning of fossil fuels; these oxides dissolve in atmospheric water vapour and fall back on earth as acid rain.  
3) natural carbon dioxide released during respiration of living organisms dissolves in water, forming carbonic acid which is the chief contributor to acidity in rain water  
4) chlorofluorocarbons readily react with various chemicals near the earth's surface, producing acidic intermediates which cause acid precipitation
- 33) Consider the following:  
a) Oxides of Hydrogen      b) Oxides of Nitrogen      c) Oxides of Sulphur  
Which of the above causes/cause acid rain?"?  
1) (a) and (b) only      2) (a) and (c)      3) (b) and (c)      4) (a), (b) and (c)
- 34) Which of the following greenhouse gases is entirely produced by human activities ?  
1) Methane      2) Carbon dioxide      3) Nitrous oxide      4) Chlorofluorocarbons
- 35) The main gas responsible for ozone depletion is :  
1) Carbon dioxide      2) Nitrogen dioxide      3) Methane      4) Chloro fluro carbon
- 36) Brominated flame retardants used in many household product like mattresses and upholstery. Why is there some concern about their use?  
a) They are highly resistant to degradation in the environment.  
b) They are able to accumulate human and animals.  
**Answer Options :**  
1) (a) only      2) (b) only      3) Both (a) and (b)      4) Neither (a) nor (b)

- 37) Due to their extensive rice cultivation, some regions may be contributing to global warming. To what possible reason/reasons is this attributable?
- a) The anaerobic conditions associated with rice cultivation cause the emission of methane
  - b) When nitrogen based fertilizers are used, nitrous oxide is emitted from the cultivated soil

**Answer Options :**

- 1) (a) only                      2) (b) only                      3) Both (a) and (b)                      4) Neither (a) nor (b)

- 38) What are the possible limitations of India in mitigating the global warming at present and in the immediate future?
- a) Appropriate alternate technologies are not sufficiently available
  - b) India cannot invest huge funds in research and development
  - c) Many developed countries have already set up their polluting industries in India

**Answer Options :**

- 1) (a) and (b) only                      2) (a) and (c)                      3) (b) and (c)                      4) (a), (b) and (c)

- 39) Which of the following are objectives of India's Intended Nationally Determined Contributions (INDCs)?
- a) Increase the forest cover to 33%
  - b) Install 175 GW of solar wind and biomass electricity by 2022
  - c) Reducing emission intensity by 1/3rd by 2030
  - d) Create additional carbon sink of around 3 billion by 2030

**Answer Options :**

- 1) (a) and (b) only                      2) (a), (b) and (c)                      3) (b), (c) and (d)                      4) (a), (b), (c), (d)

- 40) In the Union Budget 2011-12, a full exemption from the basic customs duty was extended to the bio-based asphalt (bioasphalt). What is the importance of this material ?
- a) Unlike traditional asphalt, bioasphalt is not based on fossil fuels.
  - b) Bioasphalt can be made from nonrenewable resources.
  - c) Bioasphalt can be made from organic waste materials.
  - d) It is eco-friendly to use bioasphalt for surfacing of the roads.

**Answer Options :**

- 1) (a) and (b) only                      2) (a), (b) and (c)                      3) (a), (c) and (d)                      4) (a), (b), (c), (d)

- 41) With reference to Black carbon, consider the following statements:
- a) Black Carbon is produced due to incomplete combustion of biomass.
  - b) It absorbs solar radiation at all wavelengths.
  - c) Deposition of black carbon on snow decreases albedo.

**Answer Options :**

- 1) (a) and (b) only                      2) (a) and (c)                      3) (b) and (c)                      4) (a), (b) and (c)

- 42) Which of the following statements are correct about the deposits of 'methane hydrate'?
- a) Global warming might trigger the release of methane gas from these deposits.
  - b) Large deposits of 'methane hydrate' are found in Arctic Tundra and under the seafloor.
  - c) Methane in atmosphere oxidizes to carbon dioxide after a decade or two.

**Answer Options :**

- 1) (a) and (b) only                      2) (a) and (c)                      3) (b) and (c)                      4) (a), (b) and (c)

- 43) As per the World Resources Institute (2011) which of the following countries is the world's highest carbon emitter?  
1) U.S.A                      2) Russia                      3) India                      4) China
- 44) In the context of which of the following do some scientists suggest the use of cirrus cloud thinning technique and the injection of sulphate aerosol into stratosphere?  
1) Creating the artificial rains in some regions  
2) Reducing the frequency and intensity of tropical cyclones  
3) Reducing the adverse effects of solar wind on the Earth  
4) Reducing the global warming
- 45) Consider the following :  
a) Photosynthesis      b) Respiration      c) Decay of organic matter      d) Volcanic action  
Which of the above add carbon dioxide to the carbon cycle on Earth?  
1) (a) and (b) only      2) (a) and (c) only      3) (b), (c) and (d)      4) (a), (b), (c), (d)
- 46) Human activities in the recent past have caused the increased concentration of carbon dioxide in the atmosphere, but a lot of it does not remain in the lower atmosphere because of  
a) its escape into the outer stratosphere.  
b) the photosynthesis by phytoplankton in the oceans.  
c) the trapping of air in the polar ice caps.  
**Answer Options :**  
1) (b) only      2) (a) and (c)      3) (b) and (c)      4) (a), (b) and (c)
- 47) Which of the following air pollutants is/are included in the National Air Quality Index?  
a) Sulphur dioxide      b) Ozone      c) Carbon dioxide  
d) Lead      e) Ammonia  
**Answer Options :**  
1) b, a, c, e, d      2) a, b, d, e      3) b, c, a, d, e      4) d, b, c, a, e
- 48) Vehicular Emission Norms under the Bharat Stage emission standards cover which of the following pollutants?  
a) Carbon Monoxide? (CO)      b) NO<sub>x</sub>  
c) Particular Matter (PM)      d) Sox  
e) Hydrocarbon (HC)      f) Ozone  
**Answer Options :**  
1) b, a, c, f, e, d      2) a, b, c, e      3) b, c, a, d, e      4) d, b, c, a, e, f
- 49) Consider the following sectors of India:  
a) Agriculture      b) Industrial processes and product use      c) Energy      d) Waste  
Arrange the above in the increasing order of their contribution to GHG emissions.  
1) d, b, a, c      2) a, b, d      3) b, c, a, d,      4) d, b, c, a,

- 50) With reference to the Intergovernmental Panel on Climate Change (IPCC), consider the following statements:
- a) It is a leading international body for assessment of climate change
  - b) It conducts independent research to provide scientific data on climate change and its effects.
  - c) It was set up jointly by the World Meteorological Organization (WMO) and United Nations Environment programme (UNEP)

**Answer Options :**

- 1) (a) and (b) only      2) (a) and (c)      3) (b) and (c)      4) (a), (b) and (c)

