**2011   
PAPER IV**

**Time : 3 HoursMax. Marks: 150**

**Note:** The candidate has to answer 15 questions  
5 questions from each section.

**SECTION I**

* + 1. 5 Illustrate the National Policy on Science and Technology.
    2. 5 Discuss the role of technology missions in Indian with a suitable example.

OR

* 1. Discuss on
     1. 5 Intellectual Property Rights.
     2. 5 National Policy on Technology Missions.
     3. 5 Comment on "Chnadra Yaan" Programme.
     4. 5 Discuss two salient features of IRS-5 Satellite.

OR

* 1. Illustrate the role of Indian Space Programmes on
     1. 6 Rural India
     2. 4 Natural Resources
  2. 10 Comment on the impact of the growth of Computer industry on the economic growth of India.

OR

* 1. Write on
     1. 5 Communications and remote sensing
     2. 5 Influence of Information Technology on Indian Rural Sector.
     3. 6 Of late there is lot of public resistance towards the establishment of coal based power plants. Comment.
     4. 4 Discuss the reasons for the sparse use of renewable resources in India

OR

* 1. Deliberate on
     1. 4 Wind power in India
     2. 3 Biomass management in India
     3. 3 Ocean energy
  2. Write on
     1. 5 Disaster Management Programmes in India
     2. 5 Mitigation methods to address Global warming.

OR

* 1. 10Discuss the problems associated with unabated urbanization and suggest the ways and means to arrest this.

**SECTION II**

* 1. Discuss the Agricultural research in Indian mentioning its linkages. Describe the research and educational activates in the filed of agriculture, animal husbandry and fisheries.

OR

* 1. Elucidate a low volume high value product giving the example of insulin. Mention the role of Indian companies for its production.
  2. Discuss the applications of plants in different areas with examples.

OR

* + 1. Differentiate between wild and domestic animals.
    2. Give an overview of how animals are exploited in medical research.
  1. Give a brief description of GM crops and explain the regulations and concerns associated with the release of a Genetically Modified crop.

OR

* 1. Define biofertilizers. Give an account of technology involved for the mass production of different biofertilizers, with their application.
  2. Discuss in detail about HIV virus; also mention the symptoms associated with the infection, preventive measures and diagnostic test for disease confirmation.

OR

* 1. Describe the causative agent for malaria, emphasize its life cycle in different hosts and discuss the preventive measures for the diseases.
  2. Define immunity. Discuss the concept of vaccination and explain how the vaccine for OPT is produced conventionally.

OR

* 1. What do you understand by a vaccine? Describe the journey of development from conventional to modern day (Recombinant vaccines).

**SECTION III**

* 1. In your own words explain the steps to bring awareness and in educating towards Environmental Protection in India

OR

* 1. Write the salient features of Water Act and Water pollution Cess Act.
  2. Give an account on mineral resources of India. Explain the impacts of mining activity on the environment.

OR

* 1. Explain Integrated Water Resource Management. Give the importance of Water user Associations
  2. What are the natural and human induces threats to biodiversity? Give an example of each.

OR

* 1. What is meant by the term natural Selection? Draw a food chain that has you as the top consumer.
  2. Explain Urban Governance and role of community in Municipal Solid Waste Management.

OR

* 1. Discuss the sources, impacts and control measures of Marine pollution.
  2. Explain National Action Plan on Climate Change (NAPCC), objectives and recommendations.

OR

Discuss the strategies for wasteland reclamation.