1. Discuss the changing concerns of the nature-human interface over time.

Ans: A qualitative and epoch-making shift in the nature-human interface became evident with the onset of industrial age. The level of technology of industrial age liberated man from physical labour and introduced the exploitation of abiotic sources of energy that replaced human and animal energy. Since ancient past thermal energy had been used in direct applications, but during industrial age it was used to mechanise tools. Industrial age introduced the conversion of thermal energy to mechanical energy, hence expanded the possibilities of its exploitation. The ever increasing demands had also led to the search for newer forms of energy and to the discovery of hydrocarbons, i.e., coal, petroleum products, etc., as their principal source. Unlike earlier renewable sources of energy, though, hydrocarbons, are non-renewable. The introduction of nonrenewable sources of energy redefined the relationship between nature and man and the concept of the conservation of natural resources came into existence. A phenomenal growth in production possibilities and abundant availability of finished goods were two major features of industrial age. The replacement of animate forms of energy with the inanimate forms presented huge possibilities of harnessing natural resources. The technological advancement facilitating better and commercial use of new forms of energy expanded the demand for raw materials as also the markets for finished goods. Another major cause of concern in this regard has been the development of materials not naturally available in the world, i.e., the polymers. The chemical revolution of the 1930s and 1940s developed an artificial material which was not biodegradable, thus difficult to destroy and decompose. At the same time, the wider applications of the material at industrial and domestic front at low cost of production encouraged its wider circulation. Similarly, the question of the viability of nuclear fuel as a source of energy has been a major issue of debate. The production of non-natural radioactive substance for energy production has been a major scientific and technological development but again the decay or the proper and cost effective decomposition of residue has been a major technological failure. While according due importance to the role of new technologies in the portrayal of a comprehensive picture of human-environment interface, we must not neglect the socio-political considerations. Until 1700, the rights and rewards of exploitation of the natural world lay largely in the hands of an elite aristocracy. The democratic revolutions of the late 1700s, including the American Revolution of 1775-76 and the French Revolution of 1789-1799, triggered a restructuring of the framework of society throughout most western societies. With this change came increasing access of individuals to productive resources, and an increased ability to use them for improving economic and social status. The legitimate rights of exploitation of nature were now extended to individuals at large in society. The 1800s were the culmination of a period of worldwide spread of western culture through colonialism and establishment of world trade. The Western system of environmental exploitation was thus spread widely, so that it became the operational system even in areas where the basic philosophical view of human and nature was quite different. Human acts were henceforth seen as socially constructed and man got located at the centre of creation. As a result the relationship between nature and man was redefined. The breakdown of “biological regime” led to an exponential growth in human population. Initial demand of labour by the early industrial revolution and relative food security sustained this growth. At the same time, scientific knowledge along with technological development provided a world vision where technology was portrayed as solution to all human problems especially hunger and poverty.

2. How did the perceptions of the Indian landscape evolve since ancient times?

Ans: The description of the physical features of India provides the ideal backdrop to examine the social perception of landscape as it evolved since ancient times. The beginning of civilisation in India is traced to the semi-arid region of Sind. The river valleys of the arid region provided suitable conditions for the emergence and growth of a society based on agriculture. At that time the ‘technological constraints’ forced humans to not venture to the densely forested areas of Ganga-Yamuna Doab and the foothills of the Himalayas. It is only in the early Vedic literature that glimpses of the expansion of human settlements from the north-western India towards the Ganga-Yamuna Doab are provided in ample measure. A shift from the semi-arid region to more wet regions of Ganga-Yamuna Doab was a clear manifestation of the different needs of the settlers. The nomadic character of the new settler necessitated movement towards a greener region and with the ‘advent of iron’ settlement in the densely forested region became a reality. This was also the beginning of an assault on the forest frontiers. Gradually the agriculture spread, forests shrank and empires began to take shape. The period also witnessed the establishment of republics along with monarchial kingdoms. It is interesting to note that whereas the monarchies were concentrated in the Ganga plain, the republics, most of which pre-dated the monarchies, were ranged round the northern periphery of these kingdoms in the foothills of the Himalayas. Perhaps due to the fact, that it was easier to clear the wooded low-lying hills than the marshy jungles of the plain. It also suggests that there had been continuous interaction between the settled agriculture and the adjoining forest areas, a fact substantiated by Kautilya. He visualised forests and mountains as providing effective barrier against the enemies. He also supported management of forests to generate revenue as well. Thus we can suggest that forests and mountains were perceived in terms of their economic and strategic significance. It should be noted that the landscape was visualised not only in terms of the economic and strategic significance but also its aesthetic value that was appreciated. Ancient literature is full of references where landscape has been eulogised in terms of the bounty it provided and the visual pleasure it offered. In the ancient Tamil poetry, love of man and woman is taken as the ideal expression of ‘inner’ self as well as outer world. The moods of separation and union are described by borrowing certain attributes from the wider natural world and placed within the rituals of the poetry. There are four kinds of “place”; each is presided over by a deity and named for a flower or tree characteristic of the region:

1. Mullai, a variety of jasmine, stands for the forests overseen by Mayon, the dark-bodied god of herdsmen;
1. Kurinci (pronounced Kurinji), a mountain flower, for the mountains overseen by Murukan, the red-speared god of war, youth and beauty;
1. Marutam, (pronounced Marudam), a tree with red flowers growing near the water, for the pastoral region, overseen by Ventan, the rain god; and