

Inter National Indian School Dammam
Model Examination January 2015
Class XI GEOGRAPHY (Theory)

TIME : 3 hours


SET : A

M.Marks : 70

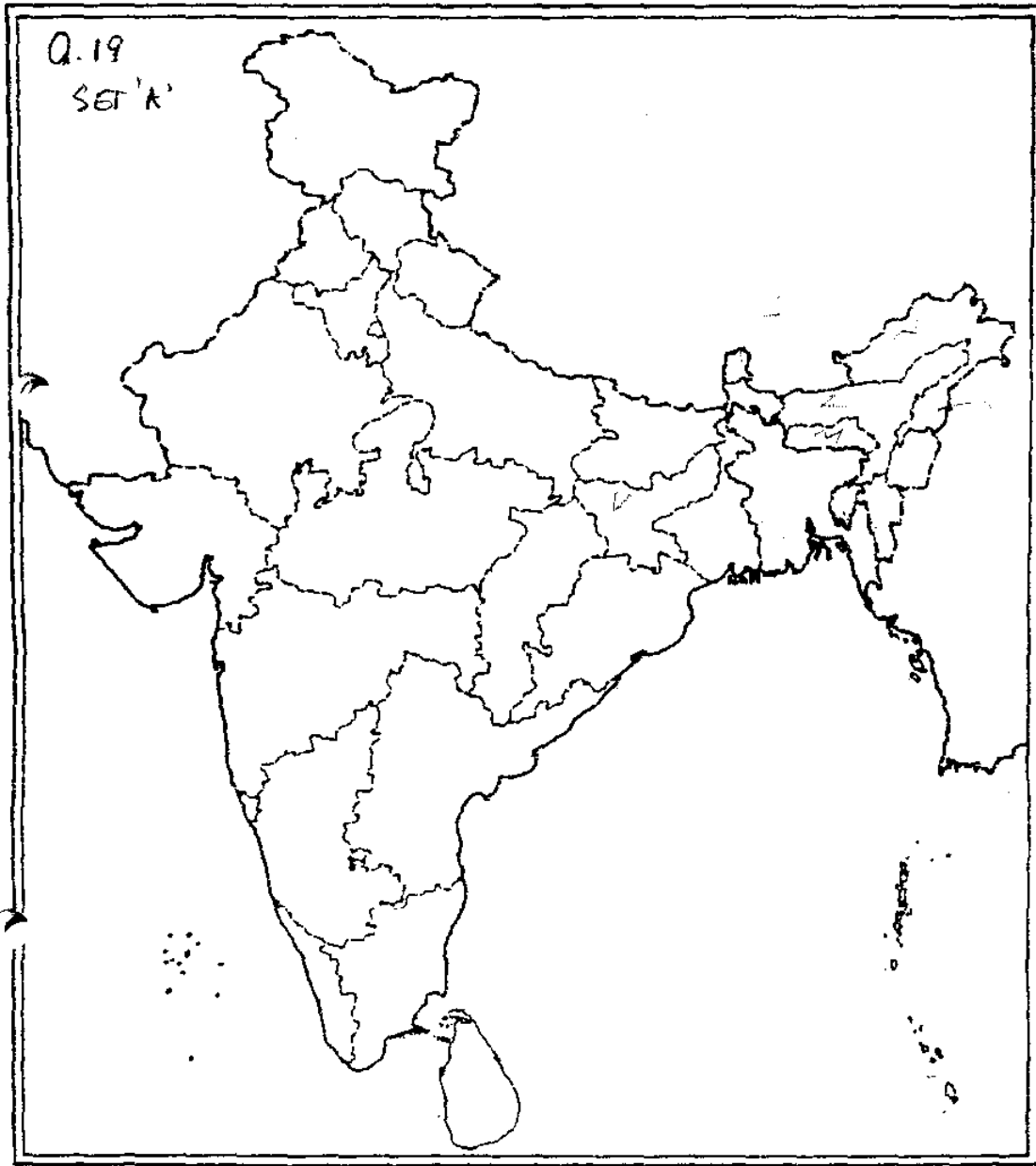
GENERAL INSTRUCTION

- All the questions are compulsory and marks are indicated against each questions.
 - Question from 1 to 7 are of very short type answer and carry 1 mark each.
 - Question from 8 to 13 are short type answer and carry 3 marks each.
 - Question from 14 to 18 are long type answer and carry 5 marks each.
 - Question from 19 to 20 are related to map work on world and India map provided along with question paper and carry 5 marks for each. You must be attached with your answer.
- Question no 21 is related to Open Text Book Material, read and answer the questions.

1. What is a Palk Strait ?	1
2. Name any two west flowing river of peninsular India	1
3. Define the term 'petrology'.	1
4. Give two example of Jovian planet.	1
5. What do you understand by salinity of a sea ?	1
6. Explain the meaning of 'exotic species'.	1
7. Where is located Nanda Devi Biosphere Reserve in India	1
8. Explain three characteristic features of peninsular plateau .	3
9. How does Himalayan mountain system act as a climatic Divide ?	3
10. What do you understand by 'intrusive form'? list any four volcanic landforms ?	3
11. What is soil conservation? Suggest some measures to conserve soil erosion.	3
12. Explain the concept of 'the Big Splat Theory'	3

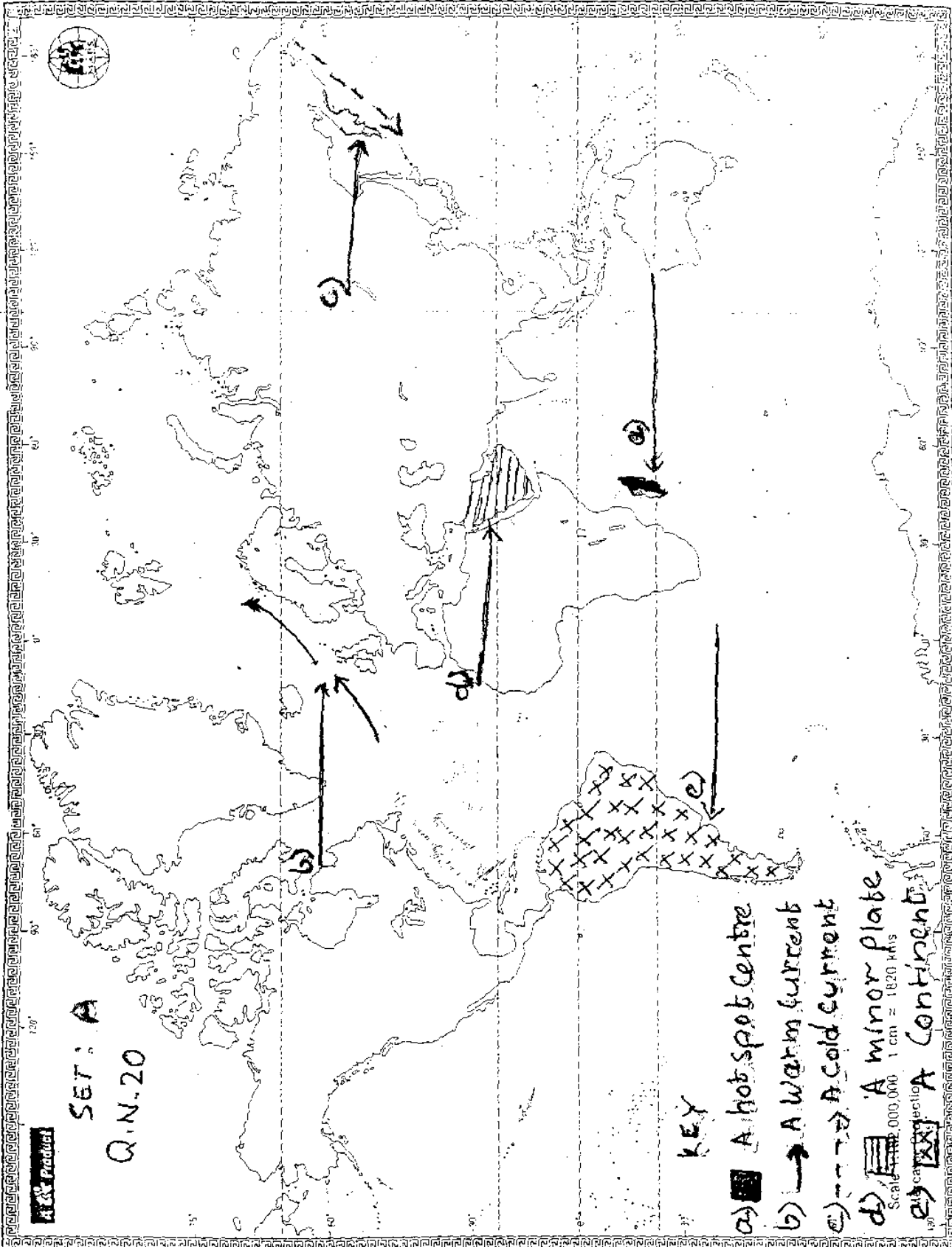
13. What are the various mobile and mighty exogenic geomorphic agents and what is the Prime job they perform ? 3
14. Define the term rock. Describe the nature and formation of sedimentary rock 5
15. What steps have been taken by the govt. of India in protection and conservation of wild life ? Write a short notes on "NILGIRI BIOSPHERE RESERVE". 5
16. Explain any five characteristics feature of Himalayan Drainage System 5
17. Name the scholar who put forth an idea of 'Continental drift theory'. Discuss his argument in this regard. 5
18. 'Wind is a powerful agent which brings about geomorphological changes in desert land.' Discuss the statement with reference to erosional and depositional feature 5
19. Mark and label the following features on the outline political map of India  5
- a) Largest State b) area under black soil in Gujarat c) Sunderbans
d) Montane forest e) Coromondal coast
20. Identify the marked features with the help of given map legend and write their Correct name against each 5
- a) Hot Spot centre
b) Warm Current
c) Cold Current
d) A Minor Plate
e) A Continent
21. Read the **open text book material**, provided to you and answer the following
- A) What is ODS ? List the sources of **ODS** . 2
- B) How do **UV rays** affect different life forms on the earth ? Explain. 3
- C) Analyse the role played by various International agencies for conserving ozone layer and what were the commitments made by India under **Montreal protocol** in this regard. 5

Outline Map of India (Political)
भारत का रेखा-मानचित्र (राजनीतिक)



WORLD - OUTLINE

Srd. Section :



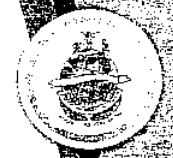
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SET: A
Q.N.-20

KEY

- a) A hot spot Centre
- b) A warm current
- c) A cold current
- d) A minor plate
Scale: 1:100,000,000 1 cm = 1820 kms
- e) A continent

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 © Government of India, Copyright: 1995
 Based upon Survey of India map with all the mistakes of the Surveyor
 General of India
 The horizontal aspect of globe showing the scale is a service courtesy
 requested and registered from the Department of Geology



OPEN TEXT MATERIAL

1. Theme - *Good News from Antarctica: The Hole in the Ozone layer is Shrinking!*

Abstract

Ozone, Earth's blanket which protects it from the ultra violet rays of the Sun is found in Stratosphere, the second layer of the atmosphere. Ultra violet rays of the Sun are capable of causing cancer and other medical problems. This makes ozone layer very significant for our survival. Human actions have depleted this layer to an extent that a hole had developed over Antarctica. This initiated the healing process at the global level which lately has helped in shrinking the hole. So isn't this shrinking of hole a good news!

Ever since the early 1980s, though, a hole in this layer has developed over Antarctica during September to November, decreasing ozone concentration by as much as 70 percent. The cause is human-produced chlorofluorocarbons (CFCs), which were once heavily used in aerosols and refrigeration.

By international agreement, CFCs have been phased out of use. The policy has real effects, new satellite observations reveal. In 2012, the hole in the ozone layer over Antarctica was smaller than it has ever been in the last 10 years.

The new observations, announced by the European Space Agency (ESA) on Feb. 8, come from Europe's Met Op weather satellite, which has an instrument specifically designed to sense ozone concentrations. The findings suggest that the phase-out of CFCs is working, the ESA reports.

Antarctica is particularly vulnerable to ozone-depleting substances, because high winds cause a vortex of cold air to circulate over the continent. In the resulting frigid temperatures, CFCs are especially effective at depleting ozone. The result is that people in the Southern Hemisphere are at increased risk of exposure from UV radiation.

CFCs persist in the atmosphere for a long time, so it may take until the middle of the century for ozone concentrations to rebound to 1960s levels, the ESA reports. However, the hole in the ozone over Antarctica should completely close in the next few decades.

Stephanie Pappas, Live Science Senior Writer | February 12, 2013 12:05pm ET

Source: <http://www.livescience.com/27049-ozone-hole-shrinks-record-low>

Chlorofluorocarbons (CFCs), hydro chlorofluorocarbons and halons are recognized as ozone-depleting substances (ODS) because they breakdown in the stratosphere and release chlorine or bromine, which destroy the stratospheric ozone layer. The most damaging ODS are found in common industrial and consumer products such as coolants, refrigerants, aerosol cans, polystyrene cups, fire extinguishers, and packing peanuts. There is no vertical convection in the stratosphere as a result of which ODS can stay there for a long time. This can further be more harmful for the stratosphere.



In absence of ozone, exposure to higher doses of ultra violet (UV) rays can have adverse effects not only on human health but also on the terrestrial as well as aquatic flora and fauna. In humans, it can lead to sun burns, pre mature aging of skin and several parts of the eye including lens, retina and cornea could be damaged. Cataract cases may register a significant increase. Several of the world major crop species are vulnerable to UV radiations too. Many agricultural crops sensitive to the UV radiation of the Sun are rice, wheat, soybean, corn, sweet corn, barley, oats, cowpeas, peas, carrots, cauliflower, tomato, cucumber, broccoli etc. Planktons that form the first step of aquatic food chain are threatened by UV radiations. Adverse impact of UV radiations is seen in many marine animals found in the Antarctic region. It is not only the living beings but Wood, plastic, rubber, fabrics and many construction materials are also degraded by UV radiation.

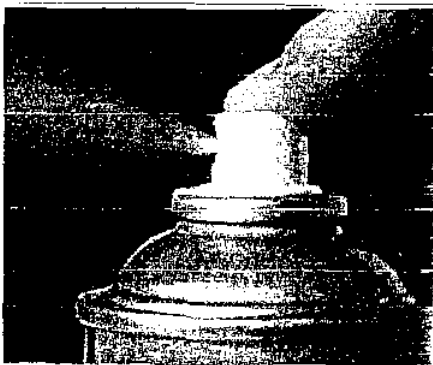


Figure 2: An Ozone depleting substance getting released from a can
Source: science.howstuffworks.com

Dr. Visit by Ozon

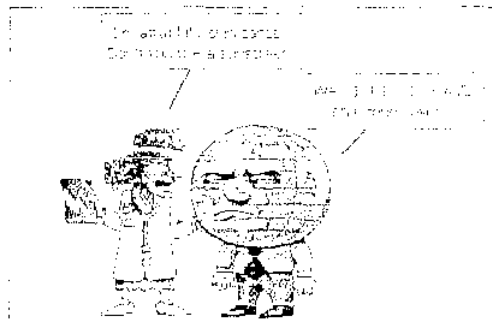


Figure 3: Ozon, the doctor
Source: funnytimes.com

Milestones in the History of Stratospheric Ozone Depletion

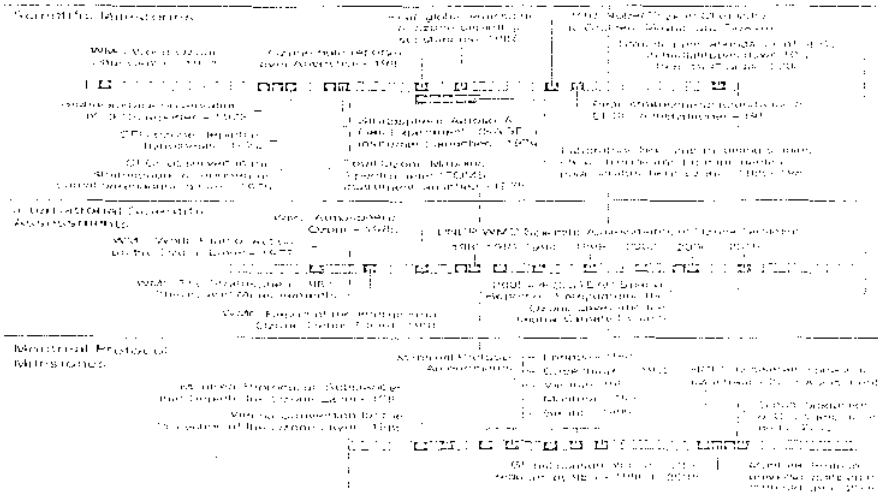


Figure 5: History of assessment of ozone depletion and the international efforts for its conservation. Source: thecivildienst.com



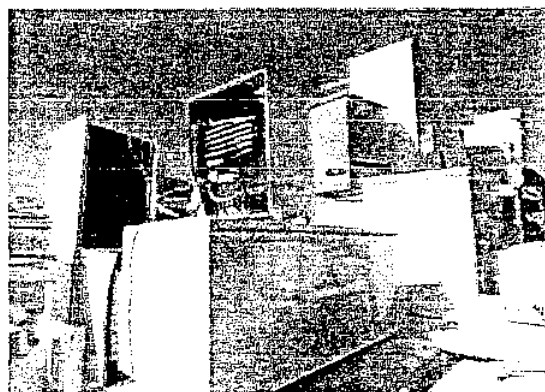
First international effort to save ozone layer was the Montreal Protocol, an agreement to reduce worldwide CFC production signed by 184 countries including USA. Serious concerns were raised for the depletion of ozone. In 1990 an amendment to the Montreal protocol was adopted according to which developed countries were to phase out all the chemicals destroying Ozone layer by 2000 and developing countries to phase out the chemicals by 2010. On December 19, 1994, the UN General Assembly proclaimed September 16 to be the International Day for the Preservation of the Ozone Layer. This is the same day when Montreal protocol was signed in 1987. This phasing out of the ODS has helped a lot in the healing of the Ozone layer. It shall help in the keeping the health hazards posed by depletion of Ozone at bay and shall promote the use of ozone friendly technology.

The developed and the developing countries of the world came together and drew out their own plans to phase out the ozone depleting substances. India acceded to the Montreal Protocol on 17 September 1992. India's per capita consumption of ozone-depleting substances at present is less than 3 g and did not cross 20 g in 1995-97, compared with 300 g permitted under the Protocol. Various awareness generation programmes have been initiated to phase out the use of CFCs and save ozone layer from depletion. Between 2001 and 2004 various awareness campaigns regarding promotion of the ozone friendly substances amongst the users were initiated at state level. Participants in the International Ozone Day held in Delhi in 2006 pledged to protect the environment. Ozone friendly equipments were exhibited. Newsletters containing information relating to latest technological development relating to ozone protection were distributed. Various workshops are regularly conducted in all the states to make the state authorities aware of the ozone related matters. Periodic dialogues and meetings are held with state authorities for the implementation of projects focusing on phasing out of ODS consuming industries in a planned manner. Various government organisations conducted different workshops and seminars to interact with the industry and update them on the latest developments in the ozone friendly technology. All these activities are directly supervised by various government and other agencies that make sure that ODS are phased out as per the plan. Efforts by some countries are listed below.

The Rwanda Environment Management Authority (REMA) has cautioned business people against importing items that contain harmful gases (hydrochlorofluorocarbons (CFCs) which deplete the ozone layer and cause global warming

Refrigeration and air conditioning appliances are among of the major sources of CFCs.

Rose Mukankomeze, the REMA director general, said activities which depend on the use of ozone depleting substances, especially for refrigeration, air conditioning and in the manufacture of mattresses, should look for alternatives to safeguard the ozone layer.





"We need to prevent excessive exposure of the earth to ultra-violet rays because they have effects on human lives. For example, they cause cancer, eye cataracts and weaken people's immune systems," she added.

Mukankomeze was speaking during a sensitisation workshop of importers of ozone depleting substances and equipment in Kigali recently.

Source: in2castafrica.net/rwanda-importers

Remembering Our Future: Bangladesh marks the successful phase out of CFCs in asthma medicines and adoption of ozone-friendly inhalers

Dhaka, 15 March 2012 - "Once upon a time, there was a system in this plant on this site that used a gas called Chlorofluorocarbons (CFCs) to manufacture Metered Dose Inhalers (MDI). For the benefit of future generations, this production facility stopped using CFCs."



These are the first lines in the Plaque for the Successful Phase out of CFCs in the Manufacture of MDIs in Bangladesh that was unveiled today in the symbolic ceremony that permanently closed down the CFC-based MDI manufacture of Beximco Pharmaceuticals Limited, the largest manufacturer of pressurized metered-dose inhalers (pMDIs) in the country.

Source: unep.org/ozonaction/News/Features/2012

Chlorofluorocarbons (CFCs) were invented in the United States over 60 years ago. Soon CFCs found their widespread use the world over in refrigeration, air conditioning and in various other industries. In due course of time it was realised that CFCs are damaging the environment. This made US which was then the largest emitter of ODS scale down the use and production of these substances.

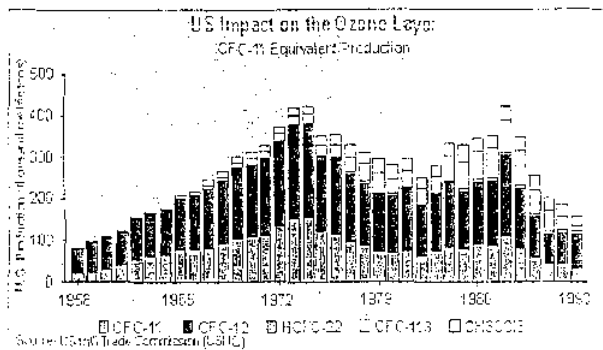


Fig 6: Temporal analysis of the production of ozone depletion substance by the USA (1958-1992)

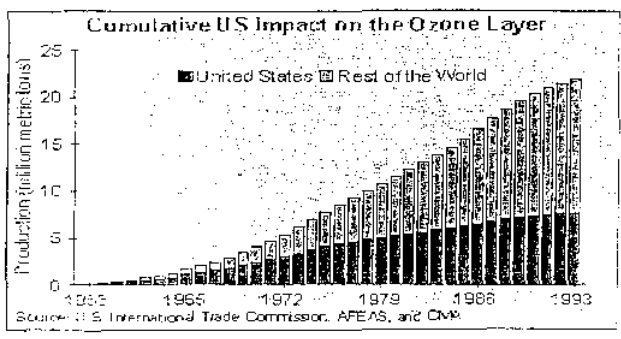
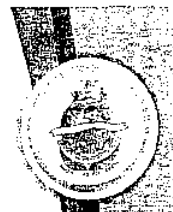


Fig 7: Comparative analysis of impact on ozone layer by the USA and the rest of the world (1958-1993)

Source: <http://www.epa.gov/ozone/science/indicat/>

Australia's performance in phasing out ozone depleting substances

Various steps are taken by Australia to check the production and consumption of ODS. As per the Montreal Protocol it has met all its obligations to phase out ODS. It is expected that Australia will phase out the consumption of HCFC by 2016, much before the limit set by the Montreal protocol. This would drastically reduce the emission of these harmful substances into the atmosphere and shall go a long way in healing ozone. Credit for this goes to the Australian experts whose efforts have helped in early phasing out of the HCFCs. Fig 8 shows and compares the Australia's and the limits set by the Montreal protocol's controlled Ozone substances import. Throughout we find that the Australia's imports have been much lower than the limit set under the protocol and there has been a gradual reduction in imports over the years which indicates an overall phasing out of ODS.

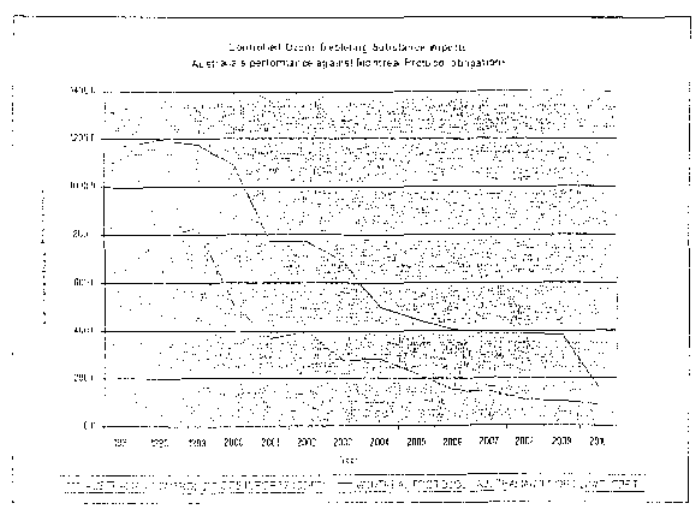


Fig 8: A comparative temporal analysis of the limits set by the Montreal protocol and the Australian controlled Ozone depletion substances imports (1997-2010).

Source: environment.gov.au/atmosphere/ozone/

India has completely phased-out production and consumption of CFCs with effect from 1st August, 2008. It would now be used only for some medicinal purposes. India attributes its success in progressively phasing out the use of ODS to identifying the priority sub sector, involving key stakeholders in planning and implementation of phase out process, notifying appropriate regulations and policies to the stakeholders and building local capacity for training besides spreading awareness amongst the general public.

An assessment of the impact of the various measures undertaken as per the Montreal protocol was made in which the experts found that the ozone layer had about 10% recovered. It was mainly attributed to cuts in global emissions of CFCs and other ODS. Global efforts made under the protocol were cited as the main reason behind the achievement. Although the stratospheric ozone layer has not yet healed, the thinning has slowed and if developed and developing countries continue to meet their Montreal Protocol goals, scientists anticipate recovery between 2060 and 2075. It is estimated that efforts to protect the stratospheric ozone layer will produce approximately \$4.2 trillion in societal health benefits in the U.S. during 1990 to 2065 and prevent 6.3 million premature deaths from skin cancer.

Under the Montreal Protocol, the developed nations after 1996 could manufacture CFCs only to help the less developed countries meet their basic domestic requirements or for their own limited uses for pharmaceutical and other research purposes. Fig 9 shows the production of fluorocarbons from 1980 to 2007. It clearly shows how global initiative after the Montreal Protocol has helped in bringing down the production of fluorocarbons. The graph shows that increasing production of the fluorocarbons during 1980s came sliding down after 1988 only after the implementation of the recommendations of the Montreal protocol.

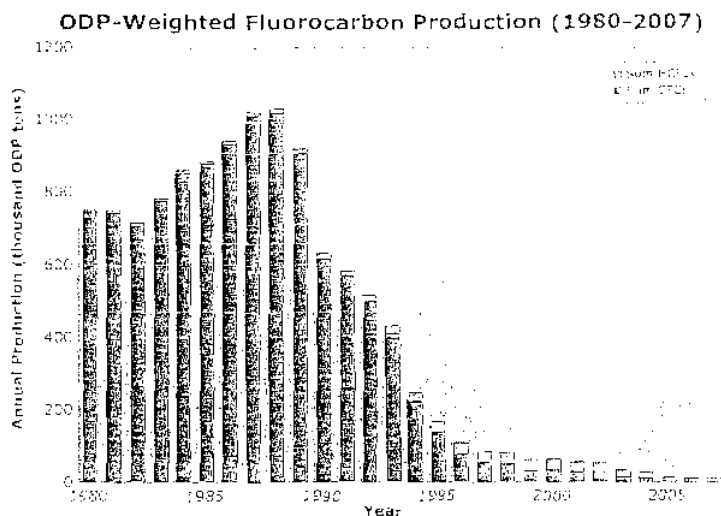
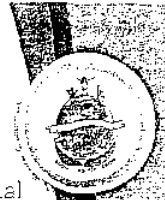


Fig 9: Reduction in the production of ODP substances by the developed world (1980-2007).

Source: <http://www.afeas.org/overview.php>



1. Calculated from production reported to AFEAS (Alternative Fluorocarbons Environmental Acceptability) with ozone depletion potential (ODP) values from "Production and Consumption of Ozone Depleting Substances 1986-1998," UNEP, October 1999. The ODP of HFCs is zero because they do not contain chlorine. Therefore, they do not appear in the above figure.
2. CFC production was not reported to AFEAS in 2005, 2006 and 2007.

There are different ways in which every individual can contribute towards healing of the ozone layer. We can be ozone friendly consumer that is we make sure that the products we buy are CFCs and ODS free. Make sure that it is clearly mentioned on the products specially refrigerator, air conditioners, aerosol spray cans and fire extinguishers that they are 'ozone friendly'. We should dispose of all old appliances like refrigerators, fire extinguishers that contain ODS. Farmers should switch over to ozone friendly pesticides. Refrigeration servicing technicians should ensure that all the leakages are fixed in time and the refrigerants that are recovered are not cracked or leaking. Various refrigerant recovery and recycling programmes should be started. In offices attempts should be made to replace all the ODS using substances with their appropriate ozone friendly alternatives. As a student you should start awareness generation programme by making posters, organising debates, writing blog and should educate your family, friends and neighbours about the use of ozone friendly substances. There are various Non-Government organisations which can help you start the awareness campaign in your area. Save Ozone, save life on Earth.

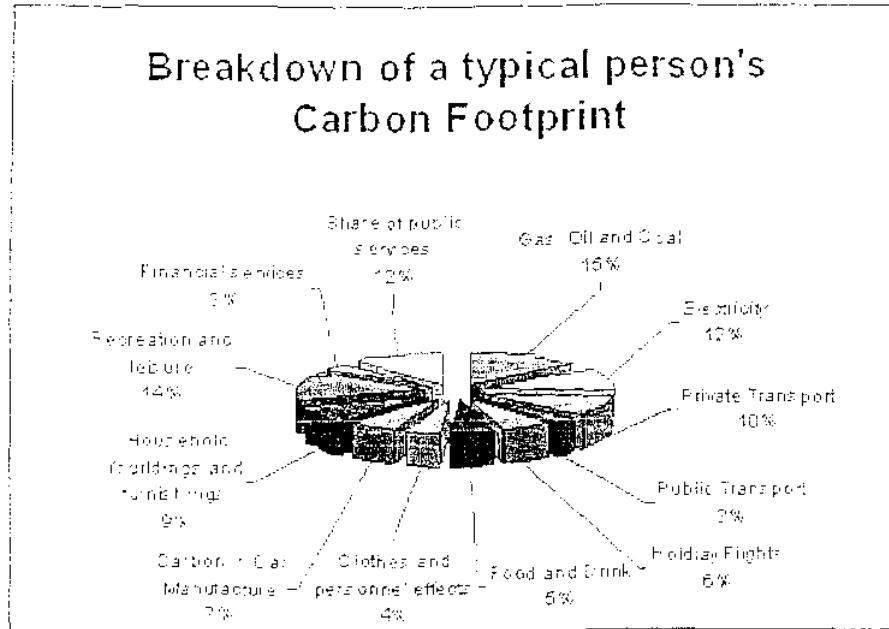



Fig 10: Breakdown of a person's carbon footprint.

Source: www.ewarth.org



Besides ODS, various greenhouse gases have harmful impact on the environment. Like Montreal Protocol that is an agreement to reduce CFC production, the Kyoto Protocol is a legally binding agreement under which industrialized countries will reduce their collective emissions of greenhouse gases by 5.2% compared to the year 1990. The goal is to lower overall emissions from six greenhouse gases - carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, HFCs, and PFCs - calculated as an average over the five-year period of 2008-12. Every individual's action has a direct impact on the environment in terms of greenhouse gases emission which is in general referred to as carbon footprints. Various steps are taken globally to check the greenhouse gases emissions. Credits are awarded to countries or groups that have reduced their greenhouse gases below their emission quota. Each one of us must make an attempt to protect environment. Fig 10 helps us understand how we leave behind our carbon footprints. A little change in the lifestyle and appropriate selection of technology can help us improve the environment. Be aware, understand and help in improving the environment. We have enjoyed enough rights; now let's shoulder a few responsibilities to better our own living conditions.

Web References

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