

**IES - COLLEGE OF
TECHNOLOGY**

(DEPARTMENT OF CHEMISTRY)

Important Questions

On

Energy, Environment, Ethics and Society

For

***BE - 1st and 3rd Semester All Branches:
(Subject Code-302)***

Submitted

BY

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ENERGY

(Chapter-1)

- Q. No. 1. What is energy? What are its uses? (June, 2004)
- Q. No. 2. State and discuss the major causes of energy intensity and energy demand in developing countries. (RGPV, Dec., 2000)
- Q. No. 3. Classify and briefly discuss the various energy resources. (June, 2008)
- Q. No. 4. Write an explanatory notes on the world energy scenarios. (Dec., 2005)
- Q. No. 5. Write a short note on the current uses and potential of global renewable energy resources. (RGPV, June, 1998)
- Q. No. 6. Write a short note on:
- (a) Energy and development
 - (b) World energy scenario
 - (c) Potential of global renewable energy resources
 - (d) India's energy scenario
 - (e) Fossil fuel resources
- (RGPV, Dec., 2006)
- Q. No. 7. What are finite (or depleting) energy resources? Name and discuss them, in brief. (RGPV, June, 2004)
- Q. No. 8. Briefly explain the nuclear fission and nuclear fusion. State the difference between them. (RGPV, Dec., 2002)
- Q. No. 9. Explain the use of solar energy for the purpose of :
- (a) Solar water heating
 - (b) Solar space heating of buildings
 - (c) Solar air-conditioning
 - (d) Solar refrigeration
 - (e) Solar drying
- (RGPV, June, 2000)
- Q. No. 10. Discuss the utility and waste management of thermal power plants. (RGPV, June, 1999)
- Q. No. 11. What is the nuclear energy? Discuss its potential and utilization in India. (RGPV, Dec., 2001)
- Q. No. 12. Name and explain, in brief, the various ways in which energy from oceans can be obtained. (RGPV, June, 2001)
- Q. No. 13. What is geothermal energy? How it is used for generation of electrical power? Discuss its merits and limitations. (RGPV, June, 2003)

- Q. No. 14. Differentiate between:**
- (a) Conventional and unconventional sources of energy**
 - (b) Nuclear fission and nuclear fusion**
 - (c) Hydrothermal fluids and geo-pressured brines geothermal energy resources**
- (RGPV, Dec., 2007)**
- Q. No. 15. Write short notes on:**
- (a) Urjagram**
 - (b) Solar pond**
 - (c) OTEC**
 - (d) Biogas**
 - (e) Photovolataic or solar cell**
- (RGPV, Dec., 2003)**
- Q. No. 16. Discuss the merits and limitations of the following sources of energy:**
- (a) Wind energy**
 - (b) Geothermal energy**
 - (c) Tidal energy**
 - (d) Wave energy**
 - (e) OTEC**
- (RGPV, June, 2005)**
- Q. No. 17. What are greenhouse gases? Name and discuss their contribution to global warming. What can be the effects of global warming? What are the remedial measures?**
- (RGPV, June, 2000)**
- Q. No. 18. “Carbon dioxide, a non-pollutant, is perhaps the single most important current environmental issue”. Discuss in terms of greenhouse effect.**
- (RGPV, Dec., 2008)**
- Q. No. 19. “Greenhouse effect at its natural level is very essential for life to exist on this marvelous planet-Earth”. Justify the statement.**
- (RGPV, Dec., 2002)**
- Q. No. 20. Enumerate and discuss the major environmental health issues related to energy.**
- (RGPV, Dec., 2001)**

Society and Environment

(Chapter-2)

- Q. No. 1. Define the following:
(a) Society (RGPV, June, 2000)
(b) Environment
(c) Biosphere
- Q. No. 2. Write an explanatory note on environment and society. (June, 2008)
- Q. No. 3. Name and discuss the four major periods of growth of human population. (RGPV, June, 1990)
- Q. No. 4. Was Malthus correct in his prediction? Compare the arguments of Malthusians and ant-Malthusians in the present scenario. (RGPV, Dec., 2005)
- Q. No. 5. Explain the term "Population Explosion". Enumerate and discuss its effects. (RGPV, June, 1998)
- Q. No. 6. What is "Population Explosion"? What are its consequences? (RGPV, Dec., 1988)
- Q. No. 7. Write short note on:
(a) Demographic dividend
(b) Population pyramid (RGPV, June, 2004)
(c) Natural capital
(d) Ecological footprint
(e) Social trap
- Q. No. 8. Write an explanatory note on solar and natural capital. (Dec., 2002)
- Q. No. 9. Differentiate between the following:
(a) Perpetual and renewable resources. (RGPV, June, 1991)
(b) Renewable and exhaustible resources.
- Q. No. 10. What are historical and modern commons? (June, 1999)
- Q. No. 11. Discuss the modern solutions to tragedy of commons. (Dec., 2001)
- Q. No. 12. What do you understand by IPAT. (June, 1980)
- Q. No. 13. Define and differentiate between EIA and EIS. (June, 2003)
- Q. No. 14. Justify the purpose of Environmental Impact Assessment (EIA). (RGPV, Dec., 1987)
- Q. No. 15. How EIA aids to the formulation of development actions? (Dec., 2003)

- Q. No. 16. Define environmental auditing. What are its objectives? (June, 1984)**
- Q. No. 17. State and discuss the various types of environmental audits. (RGPV, June, 2000)**
- Q. No. 18. Write short notes on:**
- (a) Changing perspectives on EIA roles**
 - (b) Objective of environmental auditing**
 - (c) Benefits of environmental audits**
 - (d) Sustainable development**
- Q. No. 19. Why EIA is said to be the basis of the ISO-14000 series of environmental management standards and ISO-19011 environmental auditing standards? (RGPV, Dec., 1983)**
- Q. No. 20. Discuss the interaction between environment, life-support system and socio-culture systems. (RGPV, June, 1981)**

Ecology

(Chapter-3)

- Q. No. 1. What is an environment? Enumerate and discuss the various segments of environment in brief. (RGPV, Dec., 2008)
- Q. No. 2. What are major and significant minor constituents of the atmosphere with their approximate percentage by volume? (RGPV, June, 1998)
- Q. No. 3. What are the major components of the troposphere? (June, 1990)
- Q. No. 4. "The exposed hand of an astronaut would not feel hot in the thermosphere". Comment. (RGPV, Dec., 2005)
- Q. No. 5. Write short notes on:
(a) Structure of atmosphere
(b) Hydrosphere
(c) Lithosphere
(d) Biosphere (RGPV, June, 2008)
- Q. No. 6. Define ecology and discuss its scope as an environmental engineer. (RGPV, Dec., 1988)
- Q. No. 7. What is biome? Name and explain the biosphere is that it biomes. (RGPV, June, 2004)
- Q. No. 8. Define ecosystem. Give an account of the structure and function of an ecosystem. (RGPV, Dec., 2002)
- Q. No. 9. Explain the importance and functions of producers, consumers and decomposers in an ecosystem. (RGPV, Dec., 1996)
- Q. No. 10. Explain the flow of energy through the atmosphere and its utilization in an ecosystem. (RGPV, Dec., 1999)
- Q. No. 11. Write short notes on:
(a) Matter and nutrients recycling in ecosystems
(b) Nitrogen cycle
(c) Oxygen cycle
(d) Carbon cycle
(e) Water cycle (RGPV, Dec., 2001)
- Q. No. 12. Define food chain. Name and explain various types of food chain with suitable examples. (RGPV, June, 1999)
- Q. No. 13. What is the concept of food web more real ecologically than the concept of a simple food chain? (RGPV, Dec., 2003)

- Q. No. 14. Write short notes on:**
- (i) Food chain**
 - (ii) Trophic level**
 - (iii) Position of man on the food chain**
 - (iv) Food web**
- (RGPV, Dec., 2000)**
- Q. No. 15. Discuss the concept of biodiversity at three hierarchical levels.**
- (RGPV, Dec., 2003)**
- Q. No. 16. Why should we care about the biodiversity? Comment.**
- (Dec., 1982)**
- Q. No. 17. Discuss the importance of (uses) of Biodiversity.**
- (June, 2000)**
- Q. No. 18. Write short notes on:**
- (i) Aesthetics, social and cultural values of biodiversity**
 - (ii) Option and existence values of biodiversity**
 - (iii) Ethical values of biodiversity**
 - (iv) Genetic values of biodiversity**
- (RGPV, June, 1997)**
- Q. No. 19. Discuss the concept of “Endangered species.**
- (Dec., 2005)**
- Q. No. 20. Write short notes on:**
- (a) Threats to biodiversity**
 - (b) Endangered species in India**
 - (c) Threatened species of the world**
 - (d) Endemic species of India**
- (RGPV, June, 2008)**

Sustainable Development and Environmental Pollution (Chapter-4)

- Q. No. 1. What is “Sustainable Development”/ Discuss the concept of sustainable development. (RGPV, June, 2001)
- Q. No. 2. Briefly discuss the progress on developing the concept of sustainable development. (RGPV, June, 2004)
- Q. No. 3. “Sustainable development is a moderate position between the extremes of no growth versus unlimited growth”. Justify. (RGPV, June, 1990)
- Q. No. 4. Write an explanatory notes on “Design for Environment”. (Dec., 2005)
- Q. No. 5. What does a DFE. State the most common DFE practices. (June, 1988)
- Q. No. 6. What does a DFE label on a product mean? (Dec., 1991)
- Q. No. 7. What is Life-cycle Assessment of a product? What id its goal? (RGPV, June, 2004)
- Q. No. 8. Define LCA. Enumerate and discuss the various stages/ phases of LCA methodology. (RGPV, Dec., 2002)
- Q. No. 9. Differentiate between the following:
 (a) Life-cycle inventory analysis and Life-cycle impact assessment
 (b) Life-cycle inventory analysis and Life-cycle interpretation
 (RGPV, Dec., 2008)
- Q. No. 10. Differentiate between the following LCA methodologies:
 (a) Cradle-to-grave and cradle-to-gate
 (b) Cradle-to-grave and cradle-to- cradle
 (c) Cradle-to-gate and gate-to-gate
 (d) Gate-to-gate and well-to-well
 (RGPV, June, 2003)
- Q. No. 11. Write short notes on:
 (i) DFE label
 (ii) Uses of LCA as a DFE tool
 (iii) International Organization for Standardization
 (iv) ISO 14000
 (v) Environmental management
 (RGPV, June, 2001)

(vi) Environmental Management System

(vii) Benefits of EMS

- Q. No. 12. How ISO-14000 is similar to 9000? (Dec., 2004)
- Q. No. 13. Why ISO-14001: 2004 does not specify levels of environmental performance? (RGPV, Dec., 2003)
- Q. No. 14. What do you understand by the concept of “Triple Bottom Line”? (RGPV, June, 2006)
- Q. No. 15. Define TBL. State and arguments in favour and against TBL. (Dec., 2003)
- Q. No. 16. State the various types of environmental ethics. Which types of environmental ethic(s) is/are more likely to support sustainable development? (RGPV, June, 1985)
- Q. No. 17. Write short note on “Code of Environmental Practice”. (June, 2000)
- Q. No. 18. Environmental ethics place humans in the role of stewards of nature, with a moral responsibility to sustain nature for themselves and for future generations”. Comment. (RGPV, Dec., 1998)
- Q. No. 19. What are inherent limitations of environmental laws resolving environmental issues? (RGPV, June, 2004)
- Q. No. 20. Define the following terms:
- (i) Environmental pollution
 - (ii) Contamination
 - (iii) Air pollution (RGPV, Dec., 2000)
 - (iv) Noise pollution
 - (v) Thermal pollution
 - (vi) Nuclear pollution
 - (vii) Industrial pollution
- Q. No. 21. Name and discuss some case studies for major air pollution disasters. (RGPV, Dec., 2004)
- Q. No. 22. Define the pollution. What are the sources of air pollutants? How you will classify air pollutants? (RGPV, Dec., 2003)
- Q. No. 23. What is air pollution? What are its effects on human health? (June, 2006)
- Q. No. 24. Discuss the sources and sinks, and effects of oxides of nitrogen. (RGPV, Dec., 2003)
- Q. No. 25. What are hydrocarbons? Describe the sources and sinks, effects and contaminant of hydrocarbons. (RGPV, June, 1985)
- Q. No. 26. What are particulates? Classify them according to their mode of formation. (RGPV, June, 2000)

- Q. No. 27. Define the term particulates. Describe the sources, sinks and effects of particulates. (RGPV, June, 1990)
- Q. No. 28. "It is the physical characteristics of the particulate which are quite significant in air pollution." Explain. (RGPV, Dec., 2005)
- Q. No. 29. What is acid rain? What are the causes and effects of the acid rain? How can be problem be overcome? (RGPV, June, 2008)
- Q. No. 30. "The ecological impact of acid rain is quite serious". Comment. (RGPV, Dec., 1988)
- Q. No. 31. What is ozone hole? How it is formed? What are the causes of ozone hole formation? What are the effects of depletion of ozone layer? What are the remedial measures do you suggest? (RGPV, June, 2004)
- Q. No. 32. Explain the creation of the ozone hole over Antarctica. (Dec., 2002)
- Q. No. 33. Which are the three important areas, where human activities can influence the ozone cycle? Discuss the role of NO_x and CFCs in the depletion of ozone layer. (RGPV, Dec., 1996)
- Q. No. 34. Write short notes on:
 (i) Acid rain
 (ii) Ozone hole (RGPV, Dec., 2002)
- Q. No. 35. What are air quality standards? Give the Indian ambient air quality standards for SPM, SO₂, NO_x and CO. (RGPV, Dec., 1996)
- Q. No. 36. Why is it necessary to sample and monitor air pollutants? State and discuss the common methods for collection of particulate pollutants. (RGPV, Dec., 1999)
- Q. No. 37. Write short notes on:
 (i) settling chamber
 (ii) Cyclone
 (iii) Filters
 (iv) Electrostatic precipitator (ESP)
 (v) Scrubbers or wet collectors (RGPV, Dec., 2001)
- Q. No. 38. Write short notes on:
 (a) Effects of air pollution on human health
 (b) Effects of air pollution on plants and animals
 (c) Economic effects of air pollution
 (d) Atmospheric self-cleaning processes
 (e) Approaches to air pollution control (RGPV, June, 1999)
- Q. No. 39. Write short notes on: (RGPV, Dec.,

- (i) Settling chamber 2003)
 - (ii) Cyclone
 - (iii) Filters for particulate removal
 - (iv) Electrostatic precipitator (ESP)
 - (v) Air quality standards
- Q. No. 40. Describe short notes on:**
- (a) Decibel (dB) scale
 - (b) Effects of noise pollution (RGPV, Dec., 2000)
 - (c) Noise abatement
 - (d) Indian Ambient Air Quality Standards in respect of noise
- Q. No. 41. Write short notes on:**
- (i) Transportation/ Traffic noise
 - (ii) Industrial noise (RGPV, Dec., 2003)
 - (iii) Noise from construction work
 - (iv) Noise standards
- Q. No. 42. What is water pollution? Briefly discuss the sources of water pollution.** (RGPV, Dec., 1982)
- Q. No. 43. Name and discuss the effects of water pollution.** (June, 2000)
- Q. No. 44. Write short notes on:**
- (i) Sources of radioactivity
 - (ii) Effects of nuclear pollution (RGPV, June, 2003)
 - (iii) Control of nuclear pollution
 - (iv) Disposal of nuclear waste
- Q. No. 45. Compare the characteristics (or composition) of the following industrial wastewaters:** (RGPV, June, 2000)
- (a) Sugar mill and distillery & brewery plant
 - (b) Paper & pulp industry and tannery industry

Ethics and Moral Values

(Chapter-5)

- Q. No. 1. What do you mean by “ethics”? Discuss and state what ethics is not. Also state that the ethical standards or approaches. (RGPV, Dec., 2000)
- Q. No. 2. What do you understand by moral values? State and discuss the three principle types of values. (RGPV, Dec., 2004)
- Q. No. 3. Do intrinsic values really exist? Comment. (Dec., 2003)
- Q. No. 4. Are values subjective or objective? Comment. (June, 2006)
- Q. No. 5. Differentiate between morals, values and ethics. (Dec., 2003)
- Q. No. 6. How are “right and wrong, good and evil” determined? (June, 1985)
- Q. No. 7. State the various categories/ situations of most frequently ethical dilemmas. (RGPV, June, 2000)
- Q. No. 8. How are solutions to ethical dilemmas determined? (June, 1990)
- Q. No. 9. How one should act as an ethical situation? (Dec., 2005)
- Q. No. 10. What is an ethical dilemma that immediately comes to your mind? (RGPV, June, 2008)
- Q. No. 11. What are the objectives of ethics and its study? (Dec., 1988)
- Q. No. 12. “The study of the ethics is essential for man making and character building”. Justify the statement. (RGPV, June, 2004)
- Q. No. 13. Why is it worthwhile to be ethical? (Dec., 2002)
- Q. No. 14. Write a short note on ethical commitment. (Dec., 1996)
- Q. No. 15. “Conflicts of interest are ethically problematic”. Comment. (Dec., 2002)
- Q. No. 16. Is engineering a profession?” Comment. (Dec., 1996)
- Q. No. 17. What are personal ethics? State the principles of personal ethics. (RGPV, Dec., 1999)
- Q. No. 18. Write a short note on: Principles verses absolute rules and universality. (RGPV, Dec., 2001)
- Q. No. 19. Write a short note on the following:
(a) Utilitarianism
(b) Virtue ethics
(c) Right ethics (RGPV, June, 1999)

(d) Duty ethics

- Q. No. 20. Write an explanatory notes on utilitarianism approach to ethics. (RGPV, Dec., 2003)**
- Q. No. 21. State five Codes and Centers of Professional Ethics. (Dec., 2000)**
- Q. No. 22. Write an explanatory notes on Code of Ethics for Corporate Members of the Institution of Engineers (India). (RGPV, June, 1999)**
- Q. No. 23. Write an explanatory notes on ACM Code of Ethics and Professional Conduct. (RGPV, Dec., 2003)**
- Q. No. 24. What do you understand by global ethics? What are the principles of global ethics? (RGPV, Dec., 2000)**
- Q. No. 25. How an organization can communicate its culture? (Dec., 2003)**