

ATME College of Engineering

13th K M Stone, Bannur Road, Mysore – 570028



A T M E

College of Engineering

DEPARTMENT OF CIVIL ENGINEERING

(ACADEMIC YEAR 2020-21)

Environmental studies

SUB CODE: 15CIV59

SEMESTER: V

INSTITUTIONAL MISSION AND VISION

Vision of the Institute

Development of academically excellent, culturally vibrant, socially responsible and globally competent human resources.

Mission of the Institute

- To keep pace with advancements in knowledge and make the students competitive and capable at the global level.
- To create an environment for the students to acquire the right physical, intellectual, emotional and moral foundations and shine as torch bearers of tomorrow's society.
- To strive to attain ever-higher benchmarks of educational excellence

DEPARTMENT VISION AND MISSION

Vision of the Department

To develop globally competent Civil Engineers who excel in academics, research and are ethically responsible for the development of the society.

Mission of the Department

- To provide quality education through faculty and state of art infrastructure
- To identify the current problems in society pertaining to Civil Engineering disciplines and to address them effectively and efficiently
- To inculcate the habit of research and entrepreneurship in our graduates to address current infrastructure needs of society

Program outcomes (POs)

Engineering Graduates will be able to:

PO1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write

effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change **Program Specific**

Outcomes (PSOs)

PSO1: Provide the necessary infrastructure for all situations through competitive plans, maps And designs with the aid of a thorough Engineering Survey and Quantity Estimation.

PSO2: Assess the impact of anthropogenic activities leading to environmental imbalance on Land , in water & in air and provide necessary viable solutions revamping water resources and transportation for a sustainable development

Program Educational Objectives (PEOs)

PEO 1- Engaged in professional practices, such as construction, environmental, geotechnical, structural, transportation, water resource engineering by using technical, communication and management skills.

PEO 2- Engaged in higher studies and research activities in various civil engineering fields and life time commitment to learn ever changing technologies to satisfy increasing demand of sustainable infrastructural facilities.

PEO 3- Serve in a leadership position in any professional or community organization or local or state engineering board

PEO 4- Registered as professional engineer or developed a strong ability leading to professional licensure being an entrepreneur.



ATME COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING



COURSE MODULES OF THE SUBJECT TAUGHT FOR THE SESSION AUG-NOV 2020-21 (Odd Semester)

Course Syllabi with CO's

B. E. Common to all Branches Choice Based Credit System (CBCS) and Outcome Based Education (OBE) SEMESTER – V				
ENVIRONMENTAL STUDIES				
Course Code	18CIV59	CIE Marks	40	
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60	
Credits	01	Exam Hours	02	
Module - 1				
Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake. Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.				
Module - 2				
Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind. Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.				
Module - 3				
Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution. Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.				
Module - 4				
Global Environmental Concerns(Concept, policies and case-studies):Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.				
Module - 5				
Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs. Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.				
Course outcomes: At the end of the course, students will be able to:				
<ul style="list-style-type: none">Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components.Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.				
Question paper pattern:				
<ul style="list-style-type: none">The Question paper will have 100 objective questions.Each question will be for 01 marksStudent will have to answer all the questions in an OMR Sheet.The Duration of Exam will be 2 hours.				
SL No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbook/s				
1	Environmental Studies	Benny Joseph	Tata McGraw – Hill.	2 nd Edition, 2012
2	Environmental Studies	S M Prakash	Pristine Publishing House, Mangalore	3 rd Edition 2018
3	Environmental Studies – From Crisis to Cure	R Rajagopalan	Oxford Publisher	2005
Reference Books				
1	Principals of	Raman Sivakumar	Cengage learning,	2 nd Edition, 2005

ENVIRONMENTAL STUDIES (15CIV18/28) – QUESTION BANK

MODULE-I

1. The term Environment has been derived from the French word which means to encircle or surround
a) **Environ** b) Oikos c) Geo d) Aqua
2. The term environment was introduced by
a) Jacob Van Verkul b) Tyler Miller c) Gilbertson d) **Eugene P Odum**
12. The word Environment is derived from
a) Greek b) **French** c) Spanish d) English
13. Environment is the life support system that includes
a) Air b) Water c) Land d) **All of the above**
8. The objective of environmental education is
a) Raise consciousness about environmental conditions
b) To teach environmentally appropriate behavior
c) Create an environmental ethic d) **All of the above**
6. Which of the following conceptual spheres of the environment is having the least storage capacity for matter?
a) **Atmosphere** b) Lithosphere c) Hydrosphere d) Biosphere
7. Which of the following components of the environment are effective transporters of matter?
a) Atmosphere and Hydrosphere b) Atmosphere and Lithosphere
c) **Hydrosphere and Lithosphere** d) Biosphere and Lithosphere
8. Amount of CO₂ content in atmospheric air is normally
a) 0.21% b) 0.416% c) **0.318%** d) 0.428%
9. Among fresh water availability on earth, the percentage of groundwater is about
a) 0.2% b) 0.5% c) **0.8%** d) 1.0%
10. Percentage of fresh water available on earth is
a) **2.8 %** b) 2.2% c) 0.6 % d) 2.15 %
11. About..... % of the earth is covered by water
a) 53% b) 19% c) **71%** d) 33%
12. Among the fresh water available on earth, the percentage of surface water is about
a) 50% b) 10% c) 5% d) **≤ 1%**
13. The rain forms represented by snow, dew, fog and mist is known as
a) Dry deposition b) **wet deposition** c) acid rain d) none
14. The temperature in the stratosphere ranges between
a) 25° C to 55° C b) **-56° C to -2° C** c) 10° C to -5° C d) none

15. Troposphere mainly consists of
 a) CO₂ b) H₂ c) O₃ d) O₂ and N₂
16. The volume of nitrogen present in the troposphere is
 a) 85% b) 78% c) 21% d) 5%
17. Inverse condition is the
 a) Increase in temperature with altitude b) Decrease in temperature with altitude c) Increase in temperature with latitude d) Decrease in temperature with latitude
18. Carbon content is higher in
 a) Soil b) atmosphere c) water d) living matter
19. Atmosphere consists of 79 per cent Nitrogen and 21 per cent Oxygen by
 a) Volume b) Weight c) Density d) All the three
20. The major atmospheric gas layer in stratosphere is
 a) Hydrogen b) Carbon dioxide c) Ozone d) Helium
21. UV-C radiation lies in the region
 a) 315 to 400 nm b) < 280 nm c) > 280 nm d) 280 to 315 nm
22. Which atmospheric sphere is closest to the earth surface?
 a) Troposphere b) Stratosphere c) Mesosphere d) Exosphere
23. The largest reservoir of nitrogen in our planet is
 a) Oceans b) Atmosphere c) biosphere d) Fossil fuels
24. Which among the components is termed as a life zone on the earth?
 a) Atmosphere b) Hydrosphere c) Biosphere d) Stratosphere
25. Biosphere is
 a) The solid shell of inorganic materials or the surface of the earth
 b) The thin Shell of organic matter on the surface of earth comprising of all the living things
 c) The sphere which occupies the maximum volume of all the spheres
 d) All of the above
26. Loss of water content through plants into atmosphere is called
 a) Evaporation b) Transpiration c) Vaporization d) Hydraulic cycle
27. Which of the following is absorbed by green plants from the atmosphere?
 a) Carbon dioxide b) Water c) Nutrients d) All of above
28. The word Ecology is proposed by
 a) Ernst Haeckel b) Helena Curtis c) Charles Southwick d) Charles Alton
29. The science that deals with the relationship of various organisms with their environment is known as
 a) economics b) geology c) ecology d) anthropology

30. Habitat refers to

- a) Physical conditions of the place where organisms live
- b) Chemical conditions of the place where organisms live
- c) **Both a & b**
- d) None of a or b

31. Which of the following is a biotic component of an ecosystem?

- a) **Fungi**
- b) Solar light
- c) Temperature
- d) Humidity

32. In an ecosystem, the flow of energy is

- a) Bi-directional
- b) Cyclic
- c) **Unidirectional**
- d) Multidirectional

33. Which Pyramid is always upright?

- a) **Energy**
- b) Biomass
- c) Producers
- d) Food chain

34. In complex ecosystem existence of species diversity is

- a) Poor
- b) **High**
- c) Medium
- d) None

35. The organisms who directly feed on producers are called

- a) **Herbivores**
- b) Carnivores
- c) Decomposers
- d) Saprophytes

36. The sequence of eating and being eaten in an ecosystem is called

- a) **Food Chain**
- b) Carbon cycle
- c) Hydrological cycle
- d) Anthropogenic system

37. Which of the below is a producer in an ecosystem?

- a) **Plants and some bacteria capable of producing their own food**
- b) Animals
- c) Human beings
- d) Fish

38. Which of the following statements is false?

- a) Inorganic nutrients are recycled in an ecosystem
- b) Energy flows through the ecosystem in the form of carbon bonds.
- c) **Energy is recycled in an ecosystem**
- d) Respiration process releases energy

39. In aquatic ecosystem phytoplankton can be considered as a

- a) Consumer
- b) **Producer**
- c) Saprophytic organisms
- d) Macro consumer

40. The basic requirements of human beings are provided by

- a) Industrialization
- b) Agriculture
- c) **Nature**
- d) Urbanization

41. In an ecosystem biological cycling of materials is maintained

- by a) Producer
- b) Consumer
- c) Decomposer
- d) **All of the above**

42. Organisms which feed directly or indirectly on producers are called

- a) Prey
- b) **Consumers**
- c) Decomposers
- d) Detritus

43. The primary producers in a forest ecosystem are

- a) **Chlorophyll containing trees and plants**
- b) Herbivores
- c) Carnivores
- d) Bacteria and other micro-organisms

- 44. Abiotic components include**
 a) Soil b) Temperatures c) Water d) All the above
- 45. Which of the following is true?**
 a) Green plants are self nourishing b) Producers depends on consumers
 c) Biotic components includes all nonliving components d) Herbivores depend on Carnivores
- 46. Primary consumer is**
 a) Herbivores b) Carnivores c) Macro consumers d) Omnivores
- 47. A predator is**
 a) An animal that is fed upon b) An animal that feeds upon another animal
 c) Animal that feeds upon both plants and animals d) A primary consumer
- 48. Access to food is mainly determined by**
 a) Household income b) Food assistance programs c) Human resources d) Society/Community
- 49. Which among the following is a climatic factor?**
 a) Pressure b) Humidity c) Temperature d) All of the above
- 50. Which of the following is the terrestrial ecosystem?**
 a) Forest b) Grass land c) Desert d) All of the above
- 51. Ecological pyramids are studies of**
 a) Pyramid of numbers b) Pyramid of biomass c) Pyramid of energy d) All of the above 52.
- A trophic level of organism represents**
 a) An organism's position in a biomass b) An organism's position in food chain
 c) Group of organisms in the food chain d) An organism's position in an ecosystem
- 53. Factors responsible for balanced ecosystem are**
 a) Balance between predator and prey b) Balance between vegetation, herbivores and carnivorous
 c) Balance between competing species and biotic factors d) All of the above
- 54. A food web consists of**
 a) A portion of a food chain b) an organisms position in a food chain
 c) Interlocking food chains d) a set of similar consumers
- 55. Which of the following statements are true?**
 a) Man is not dependent on nature
 b) Resources are unlimited, so one can use them as per ones wish
 c) Energy can be convened from one form to another, but some percentage is lost into the Env
 d) Matter can be generated afresh. It need not be recycled or reused.
- 56. Which of the following is not a desirous chemical in a good habitat?**
 a) Oxygen b) Carbon di-oxide c) Sulphur di-oxide d) Nutrients
- 57. An ecosystem is a region in which**

- a) Dead organism interact with their environment b) Living organism do not interact with their environment c) **Living organism interact with their environment** d) All these

58. The perfect equilibrium existing in the biosphere between the various organisms is known as

- a) Environmental balance b) **Ecological Balance** c) Ecological cycle d) None of these

59. The term ecosystem was first proposed by

- a) Jacob Van Verkul b) **A.G. Transley** c) Costana d) Marie Gibbs

60. The two major components of ecosystem are

- a) Adiabatic & isotropic b) Ecological & climatological c) Cyclic & biologic
d) **Abiotic & biotic**

61. Biotic components include

- a) **All living organisms** b) Water, minerals and gases c) Self-nourishing green plants d) Light, temperature, etc

62. Food chain is divided into _____ basic categories

- a) Four b) **Three** c) Five d) Seven

63. The transfer of energy and nutrients from one feeding group of organisms to another in a series is called

- a) Energy chain b) **Food chain** c) Balanced ecosystem d) Food web

64. A simple food chain starts with

- a) **green plants** b) waste of organisms and dead organisms
c) both of these d) none of these

65. In a food chain humans are

- a) Primary consumers b) Secondary consumers
c) **Primary and secondary consumers** d) Producers

66. Tendency of pollutants to become concentrated in successive trophic levels is known as

- a) Bioremediation b) **Biomagnifications** c) Biopiracy d) Biorhythm

67. Social security is one of the most important programs providing benefits to

- a) Worker/employee b) Un-employed c) Families of deceased d) **All of these**

68. Housing has become inaccessible to the poor due to

- a) Increased population b) Non-availability of land c) **High cost** d) None of these

69. Anthropological activities means

- a) Natural activities b) Bacterial activities c) Wild animal activities d) **Human activities**

70. Which of the following conditions must be fulfilled to ensure food security?

- a) Food must be available b) Each person must have access to it
c) Food utilized/consumed must fulfill nutritional requirements. d) **all of the above**

71. Essential component of social security are
 a) Meeting personal growth and development b) Maintaining natural capital
 c) Fairness and equity in distribution of costs of resources d) Community resilience
72. Economic security is measured on the basis of
 a) Income b) Labour market and Employment c) Work, Job and Skills d) All of the above
73. Socio-economic security in environmental aspects involves
 a) Fairness & equity in distribution costs for complete existing generation
 b) Welfare of the present generation
 c) Intra and inter generational equity of resources d) All of the above
74. The government of India adopted the National Housing Habitat policy in
 a) 1998 b) 1999 c) 2000 d) 2001
75. Agricultural revolution began
 a) 1000 – 2000 years ago b) 1 million years ago c) 30000 – 50000 years ago d) 10000 – 20000 years ago
76. Intensive agriculture led to deposition of excessive quantity ofinto aquatic and terrestrial ecosystem.
 a) Nitrogen b) Phosphorus c) Sulphur d) None
77. Engineering intervention for flood control, which does not alter the characteristics of river ecosystem is
 a) Construction of Dam reservoir b) Construction of levees
 c) Channelization d) Construction of retention ponds
78. Which of the following in agriculture does not produce negative effect on environment?
 a) High salinity b) release of SO₂ c) water logging d) loss of soil fertility
79. Which of the following is not caused by the use of fertilizers in agriculture?
 a) Methemoglobinemia b) Eutrophication c) Acidification and Salinity of Soils d) None
80. Application of pesticides has increased the food production by
 a) 10 fold b) 50 fold c) 100 fold d) none
81. Pesticide causes
 a) Eye irritation b) Skin irritation c) Respiratory ailments d) All these
82. Increased use of pesticides causes
 a) genetic damage b) genetic resistance c) both a and b d) none
83. Eutrophication is
 a) an improved quality of water in lakes b) a process in carbon cycle
 c) the result to accumulation of plant nutrients in water bodies d) a water purification technique
84. Major purpose of most of the Dams around the world is
 a) Power generation b) Drinking water supply c) Flood control d) irrigation

85. Which of the following is the most environmental friendly agriculture practice?
 a) Using chemical fertilizers b) Using insecticides c) **Organic farming** d) None of the above
86. The adverse effect of modern agriculture is
 a) Water pollution b) Soil degradation c) Water logging d) **All of the above**
87. Soil erosion removes surface soil which contains
 a) Organic matter b) Plant nutrients c) **Both a and b** d) None of the above
88. Water logging is a phenomenon in which
 a) Crop patterns are rotated b) **Soil root zone becomes saturated due to over irrigation**
 c) Erosion of soil d) None of the above
89. The Impact of construction of dams
 a) Submerges forest b) Loss of wild life habitat c) Damages down stream ecosystem
 d) **All of the above**
90. Which of the following statement is false?
 a) Soil erosion effects productivity of agriculture fields
 b) It takes 300 years for one inch of agricultural top soil to fill
 c) the amount of erosion depends on soil type, slope, drainage pattern and crop management.
 d) **soil erosion helps to retain water and nutrients in the root zone**
91. Which of the following is true?
 a) Surface runoff does not carry pesticides into streams
 b) **water percolating downward through agriculture lands carries with it dissolved chemicals and contaminates ground water**
 c) Present agricultural practice does not contaminate water d) None of the above
92. Farmers have a tendency to
 a) Use optimum quantity of water b) **To over irrigate their crops**
 c) To conserve water d) All of the above
93. Organic Farming is
 a) **Farming without using pesticides and chemical fertilizers** b) Enhances bio-diversity
 c) Promotes soil biological activity d) All of the above
94. Which of the following are major environmental issues involved in agriculture?
 a) Air pollution from dust b) Water pollution c) **Soil degradation** d) None
95. Effect of modern agriculture on soil is due to
 a) Erosion b) Acidification c) Salinization d) **All**
96. During the last 30 years the percentage decrease in agricultural land due to urbanization is about
 a) 40% b) 60% c) **30%** d) 0%
97. The main impact of urbanization on plant and animal life is
 a) Increase in species b) Mutation in species c) Both a & b d) **Loss of species**

98. Urban solid waste is known as
a) garbage b) rubbish c) refuse d) all
99. Which of the following is the ill- effect of urbanization?
a) Decrease in agriculture land b) Loss of greener c) Loss of water bodies d) All these
100. Ecosystem is disturbed by housing activity because
a) Large volume of raw materials like brick, stone, timber, cement, steel plastic etc are required to be produced
b) Housing is required to provide shelter to growing population
c) Majority of housing projects are concentrated in cities only
d) Standard of living is increased by modern houses
101. Major problem/s due to industrialization is /are
a) Urbanization b) Migration of people c) Development of slums d) All these
102. Which of the following is not the environmental effect of industrialization in general?
a) Solid waste b) Water pollution c) Air pollution d) Economics
103. Sulphur dioxide is used in
a) Paper manufacture b) Textile manufacture c) Processing of fossil fuels d) Both (a) and (b)
104. The most important remedy to avoid negative impact due to industrialization is
a) Industry should be closed b) Don't allow new industrial units
c) Industry should treat all the wastes generated by it before disposal
d) Industries should be shifted far away from human habitats.
105. Bhopal gas tragedy occurred in the year
a) 1974 b) 1984 c) 1994 d) 1979
106. Bhopal Gas Tragedy caused due to leakage of
a) Methyl Iso Cyanate (MIC) b) Sulphur dioxide c) Mustard gas d) Methane
107. Mining means
a) To conserve & preserve minerals b) to check pollution due to mineral resources
c) To extract minerals and ores d) None
108. Mining of ores is done by
a) sub-surface mining b) tunneling c) only sub-surface mining d) both a and b
109. Environmental impact of mining
a) Brings order into social setup b) Devastation of ecosystem c) Present mining activity is a sustainable development d) Mining has no adverse effect on ecosystem as it is located in remote areas
110. Mining practices lead to
a) Population growth b) Rapid urbanization c) Loss of grazing and fertile land d) None of these
111. Which of the following are major environmental issues involved in mining activity?
a) Air pollution and dust b) Water pollution c) Soil degradation d) All these

112. The type of mass movement characterized by a slow and gradual down slope movement is known as
 a) Rockfill b) Mud flow c) Creep d) Landslide
113. In order to protect the health of people living along the adjoining areas of roads, one should.
 a) Plant trees alongside of the roads b) Not allow diesel driven vehicles
 c) Shift them (people) to other places d) None of the above
114. The pollution caused by transportation/ vehicular activities depends on
 a) Type of the vehicles engine b) Age of the vehicle c) Traffic congestion d) All of the above
115. Which of the following is a key element of EIA?
 a) Scoping b) Screening c) Identifying and evaluating alternatives d) All of the above
116. E.I.A can be expanded as
 a) Environment & Industrial Act b) Environment & Impact Activities
 c) Environmental Impact Assessment d) Environmentally Important Activity
117. E.I.A is related to
 a) Resource conservation b) Efficient equipment/process c) Waste minimization
 d) All of the above
118. Environmental impact assessment
 a) is a study of feasibility of a project
 b) is a study of bio-physical characteristics of the environment that may result from a human action
 c) Both a and b d) None of the above
119. EIA study will help
 a) Maximizing the benefits without overloading the planets ecosystem
 b) To estimate the future needs of the society c) To smooth implementation of the project
 d) To cope up with rapid growth of population
120. Sustainable development
 a) Discourages environmentally economic growth b) Encourages environmentally economic growth
 c) Encourages environmentally harmful and unsustainable forms of economic growth
 d) All the above
121. Sustainable development will not aim at
 a) Socio- economic development, which optimizes the economic and social benefits available in the present, without spoiling the likely potential for similar benefits in the future
 b) Reasonable and equitably distributed level of economic well being that can be perpetuated continually
 c) Development that meets the needs of the present without compromising the ability of future generations to meet their own needs
 d) Maximizing the present day benefits through increased resource consumption
122. Sustainability requires

- a) Conservation of resources b) Minimizing depletion of non-renewable resources
- c) Using sustainable practices for managing renewable resources d) **All the above**

123. The idea of sustainable development was defined for the first time by the world commission on economic development

- a) 1985 b) **1987** c) 1989 d) 1991

124. Sustainable development means

- a) Meeting present needs without compromising on the future needs
- b) Progress in human well beings.
- c). Balance between human needs and the ability of Earth to provide the resources,
- d) **All the above**

125. What would you do to prevent environmental damage?

- a) Plant trees b) Halt deforestation c) Control pollution d) **All of the above**

Module 2

1. About _____ % of the earth's surface is covered by water
a) 53% b) 19% c) **71%** d) 90%
2. The average annual per capita energy supply of fresh water available in the world is about
a) **1700 m³** b) 7200 m³ c) 19600 m³ d) 2700 m³
3. The oceans are the largest storage of water on earth containing:
a) 95% of earth's water b) 85% of earth's water c) **97% of earth's water** d) 75% of earth's water
4. Among the fresh water available in the earth, the percentage of surface water is about
a) 50% b) 10% c) 5% d) **less than 1%**
5. What is the percentage of fresh water available in lakes and streams?
a) 0.0001% b) 0.001% c) **0.01%** d) 0.1%
6. Hydraulic cycle is related to
a) **Water cycle and balance** b) Water and electricity c) water characterization d) Hydropower
7. The surface water resources of India is estimated as
a) 400 million hectare meters b) 600 million hectare meters
c) 100 million hectare meters d) 4000 million hectare meters
8. The distance up to which exclusive economic zone of a country extends beyond its base line is
a) **12 nautical miles** b) 24 nautical miles c) 200 nautical miles d) None of these
9. Water used for irrigation of food crops, fodder crops and medical herbs is known as
a) **Consumptive use** b) Commercial use c) Productive use d) Auxiliary use
10. Which of the following is not a part of the hydrological cycle?
a) Precipitation. b) Infiltration c) Transpiration d) **Perspiration**
11. The ground water availability depends on
a) Amount of rain fall. b) Geological formations c) Run off d) All of the above
12. In India ground water is rich in
a) Plains of rivers Kaveri and Krishna b) The plains of Netravati and Kapila
c) **The Gangetic plains** d) The Deccan plateau
13. Surface runoff can be stored in
a) ponds b) reservoirs c) **both a and b** d) none
14. Which among the following is a perennial river
a) **Mahanadi** b) Penner c) Narmada d) Tapi
15. Water supply for domestic consumption in Indian towns as per BIS
a) 150 lpcd b) 120 lpcd c) **135 lpcd** d) 200 lpcd
16. Water quality involves measuring the number of colonies of
a) **Coli form bacteria** b) Protozoa c) Cells d) Chromosomes

- 17. Blue baby syndrome (methaemoglobinemia) is caused by the contamination of water due to**
 a) Phosphates b) Sulphates c) Arsenic d) Nitrates
- 18. Excessive Nitrates (above 45 mg/L) in drinking water causes**
 a) Fever b) Cough & chill c) Blue baby disease d) Gastro Enteritis
- 19. Out of the following nutrients in fertilizer, which one causes minimum water pollution?**
 a) Nitrogen b) Phosphorous c) Potassium d) Organic matter
- 20. What is the permissible range of pH for drinking waters as per the Indian Standards?**
 a) 6 to 9 b) 6.5 to 7.5 c) 6 to 8.5 d) 6.5 to 8.5
- 21. Water without fluoride causes**
 a) Corrosion b) Dental cavities c) Scale formation d) Tooth decay
- 22. Fluorosis is caused due to**
 a) No fluoride intake b) Excess fluoride intake c) Low fluoride intake d) None of these
- 23. What is the maximum allowable concentration of fluorides in drinking water?**
 a) 1.0 milligram per liter b) 1.25 milligram per liter
 c) 1.50 milligram per liter d) 1.75 milligram per liter
- 24. Excess fluorides in drinking water is likely to cause**
 a) Blue babies b) Fluorosis c) Taste and odour d) Intestinal irritation
- 25. Disfigurement in the teeth is caused by excessive amount of**
 a) Mercury b) Nitrate c) Fluoride d) Lead
- 26. The organ of a baby usually damaged by lead poisoning is**
 a) Kidney b) lungs c) liver d) heart
- 27. The per capita consumption of water for domestic purposes in USA is**
 a) 300 liters b) 400 liters c) 250 liters d) 700 liters
- 28. Maximum total hardness allowed in drinking water is**
 a) 600 mg/L b) 1000 mg/L c) 650 mg/L d) 750 mg/L
- 29. Temporary hardness of water is due to**
 a) chloride hardness b) manganese hardness c) calcium hardness d) carbonate hardness
- 30. Excess of Iron in water is likely to cause**
 a) hardness b) taste c) colour d) all
- 31. The required Iron content in drinking water as specified by BIS is**
 a) 300 mg/l b) 30 mg/l c) 3 mg/l d) 0.3 mg/l
- 32. Important factor that causes water borne disease is**
 a) Using contaminated sewage for irrigation b) Leaching of untreated fecal and urinary discharges into water bodies
 c) Discharge of industrial waste water d) By eating contaminated food.
- 33. Cholera & typhoid are caused by**
 a) Worms b) Virus c) Bacteria d) Fungus

34. Malaria is

- a) water borne disease b) mosquito induced disease c) both a and b d) none

35. Cholera is caused by the bacteria

- a) *Vibrio cholerae* b) *Cholera salmonella* c) *Treponema petagium cholerae* d) *Clostridium botulinum*

36. Hepatitis is caused by

- a) Protozoa b) Virus c) Bacteria d) Fungus

37. Typhoid, cholera are examples of

- a) Viral infection b) Bacterial infection c) Protozoan infection d) None of these

38. Control of water borne diseases can be achieved effectively by

- a) Treatment of disease b) By consuming mineral water
c) By proper treatment of waste water & protecting the source of water d) By vaccination

39. Cholera, typhoid, Hepatitis-A and E are caused due to

- a) Contaminated water b) Solar radiation c) Radioactivity d) Electromagnetic radiation

40. Which one of the following disease is not a stage of arsenicosis?

- a) Malnutrition b) Diarrhoea c) Measles d) Chikungunya

41. Which one of the following disease is not a large scale children's mortality?

- a) Diffuse melanosis b) Keratosis c) Gangrene and skin cancer d) Chikungunya

42. In water treatment alum is used for

- a) softening b) coagulation c) filtration d) disinfection

43. Aeration of water removes

- a) suspended solids b) dissolved gases c) dissolved salts d) none

44. The process of decomposing organic waste in the presence of air is called

- a) reduction b) oxidation c) incineration d) pulverizing

45. Biological treatment of sewage takes place in

- a) sedimentation chamber b) screening chamber c) grit chamber d) trickling filter

46. Facultative bacteria can exist in which type of environmental conditions

- a) Presence of oxygen b) Absence of Oxygen c) Both a & b d) None of these

47. Mineral is

- a) organic matter b) naturally occurring inorganic substance c) synthetic compound d) none

48. India has the largest shares of which of the following

- a) Manganese b) Mica c) Copper d) Diamond

49. Mineral resources are

- a) Renewable b) Available in plenty c) Non renewable d) Equally distributed

50. Deep deposits of minerals are removed by

- a) Surface mining b) Subsurface mining c) Open pit mining d) Dredging

51. Which of the following is not a natural mineral?

- a) Asbestos b) feldspar c) Phosphate d) Nitrogen

52. The earth's land surface covered by forest is about

- a) 1/4 b) 2/3 c) 1/3 d) 1/5

53. Forest rich area in Karnataka is found in _____

- a) Western Ghats b) Bandipur c) Nagarhole d) Mangalore

54. _____ are referred to as Earth's lungs.

- a) Forests b) Carbon cycles c) Water sources d) Mines

55. Forests are effective sinks of

- a) Oxygen b) Carbon di-oxide c) Nitrogen oxides d) all

56. Mangroves are

- a) desert plants b) high altitude plants c) forest in tidal zones in equatorial and tropical coasts d) none

57. Forests are extremely important because they

- a) Provide clean water and clean air b) Provide habitat for wild life
c) Provide recreation and a change from the hectic urban d) all of the above

58. Deforestation means

- a) Creation of new forest land for the wild life b) Planting trees in the cities
c) Conversion of forest land for agriculture/pasture/homes etc. d) Not managing the forest properly

59. Deforestation means

- a) Preservation of forests b) destruction of forests c) mono-crop cultivation d) agriculture

60. Deforestation can

- a) Increase the rain fall b) Increase soil fertility c) Introduce silt in the rivers d) None of these

61. What percentage of its geographical area of a country should be under forest cover?

- a) 23% b) 43% c) 13% d) 33%

62. Plants use.....gas for photosynthesis

- a) Oxygen b) methane c) Nitrogen d) Carbon dioxide

63. Decreased soil fertility through rapid leaching of the essential mineral nutrients is due to

- a) Reforestation b) Deforestation c) Over exploitation d) Recycling forest products

64. During photosynthesis, trees produce

- a) Oxygen b) Carbon Dioxide c) Nitrogen d) Carbon Monoxide

65. Forests prevent soil erosion by binding soil particles in their

- a) Stems b) roots c) leaves d) buds

66. Major causes of deforestation are

- a) Shifting cultivation b) Fuel requirements c) Raw materials for industries d) All of these

67. The major carbon storage in the carbon cycle is

a) Rivers b) Atmosphere c) Oceans d) Trees

68. Which of the following statements about forest is not correct?

- a) Forests reduce erosion b) Provides recreational opportunities
c) Provides a source of economic development d) None of the above

69. The depletion of trees is causing accumulation of

- a) NO₂ b) SO₂ c) CO₂ d) O₂

70. As per the FAO definition, the maximum percentage of depletion of tree crown cover, that can be considered as deforestation is

- a) 50% b) 60% c) 70% d) 90%

71. The natural resource, among the following which is a renewable resource is

- a) fossil fuel b) metallic minerals c) non-metallic minerals d) forests

72. The role of sulphur bacteria in sulphur cycle

- a) Acts as a media for exchange of sulphur within ecosystem b) Converts the dead plants and animals into organic residue c) Both a & b d) None of these

73. Nitrogen fixation from the atmosphere is high in which type of plants

- a) Monocotyledon b) Leguminous c) Both a & b d) None

74. Facultative bacteria can exist in which type of environmental conditions

- a) Presence of oxygen b) Absence of Oxygen c) Both a & b d) None of these

75. Which among the following is not concerned to Carbon cycle?

- a) respiration b) combustion of fossil fuels c) photo synthesis d) transpiration

76. The movement of carbon between _____ is called carbon cycle.

- a) Atmosphere & Biosphere b) Atmosphere & Hydrosphere
c) Geo-sphere & Atmosphere d) Biosphere, atmosphere, Hydrosphere & Geo-sphere

77. Plants can take up nitrogen in two forms _____

- a) NH₄⁺ & NO₃ b) NH₃ & N₂ c) NO₃ d) NO₂

78. Conversion of ammonium to NO₃ by chemical oxidation is termed as

- a) Mineralization b) Leaching c) Nitrification d) De-nitrification

79. Nitrogen fixing bacteria exist in _____ of plants.

- a) Leaf b) Roots c) Stem d) Flower

80. Sulphur occurs in soil and rocks in the form of _____

- a) Oxides of Zn & Fe b) Sulphates of Zn & Fe c) Nitrates of Zn & Fe d) Sulphides of Zn & Fe

81. Conversion of nitrates into gases of nitrogen is called _____

- a) Nitrification b) Nitrogen fixing c) Reduction d) De-nitrification

82. Fixation of Nitrogen is done by

- a) Lightening b) Fixing bacteria c) Fertilizer factory d) All of the above

83. Pick out which is not concerned to carbon cycle

a) Respiration b) Combustion of fossil fuels c) Photo synthesis d) Transpiration

84. Which among the following is considered as a sedimentary cycle

a) Sulphur cycle b) nitrogen cycle c) carbon cycle d) all

1. **Energy is measured in**
 a) Blu b) Bhu c) Btu d) Ntu
2. **One Joule of energy is equivalent to**
 a) 0.2389 calories b) 23.89 calories c) 238.9 calories d) 2.389 calories
3. **The average annual per capita energy consumption in developed countries of the world is of the order by**
 a) 35 GJ b) 125GJ c) 195 GJ d) 245 GJ
4. **Which of the following is not a renewable source of energy?**
 a) Fossil fuels b) Solar energy c) Tidal wave energy d) Wind energy
5. **Which of the following is a disadvantage of most of the renewable energy sources?**
 a) Highly polluting b) High waste disposal cost c) Unreliable supply d) High running cost
6. **The total percentage of non-renewable energy sources available is**
 a) 18 b) 82 c) 30 d) 6
7. **Good example of renewable energy sources is**
 a) Hydro power b) Coal c) Oil d) All these
8. **Identify the non-renewable source of energy from the following**
 a) Coal b) Fuel cells c) Wind Power d) Wave power
9. **Which resources are inexhaustible?**
 a) Renewable b) Fossil fuel c) Non renewable d) Mineral
10. **Renewable energy is**
 a) Primary source b) Secondary source c) Tertiary source d) None of these
11. **Which of the following is a non-conventional source of energy?**
 a) Wind energy b) Solar energy c) Biogas d) All of the above
12. **Solar radiation consists of**
 a) UV b) Visible light c) Infrared d) All of these
13. **Oil and Gas are preferred because o**
 a) Easy transportation b) Cheap c) Strong smell d) All of These
14. **Fossil fuels are converted into energy by**
 a) Burning b) Cooling c) Sublimation d) Melting
15. **Annual oil consumption in India is about**
 a) 3.25 million tones b) 325 million tones c) 32.5 million tones d) 3.25 billion tones

16. The energy consumption for global transportation is

- a) 42% b) 24% c) 4% d) 34%

17. Natural gas contains

- a) Carbon dioxide b) Hydrogen c) Methane d) nitrogen

18. Use of Compressed Natural Gas (CNG) came into effect from

- a) Dec 2000 b) Dec 2002 c) Dec 2004 d) Dec 2006

19. The basic element of fossil fuel is

- a) Sulphur b) Phosphorous c) Carbon d) Oxygen

20. The fossil fuel which causes maximum environmental pollution due to its use in generation of thermal power is

- a) Coal b) Oil c) Natural gas d) None of these

21. Highest producer of Oil and petroleum is

- a) Middle East countries b) America c) China d) India

22. Reduction in usage of fuels cannot be brought about by

- a) Using alternate fuels b) Changing lifestyles c) Reducing car taxes
d) Both a & b

23. Which of the following source of energy is less eco-friendly?

- a) Biogas b) Wind c) Nuclear d) solar

24. Harnessing the wind energy is done by

- a) Wind Mill b) Ball mill c) Flour Mill d) Pig mill

25. Coal is a dirty fuel to burn, mainly because it emits

- a) Oxygen b) Nitrogen c) Hydrogen d) sulphur-di-oxide

26. About $\frac{3}{4}$ of the coal deposits are found in

- a) Karnataka b) Tamil nadu c) Kashmir d) Bihar & Orrissa

27. Wind Farms are located in

- a) River basin b) Plain area c) Hilly area d) Valley area

28. Wind energy generation depends on

- a) Direction of wind b) Velocity of wind c) Humidity d) Precipitation

29. With a minimum resource maximum energy can be created by

- a) Solar radiation b) Wind c) Nuclear fuels d) tidal waves

30. Which of the following is a hazard of a nuclear power plant?

- a) Accident risk when tankers containing fuel cause spill
b) Radioactive waste of the power plant remains highly toxic for centuries
c) Release of toxic gases during processing
d) All of these

31. The most important fuel used by nuclear power plant is

- a) U -235 b) U-238 c) U-245 d) U-248

32. Nuclear power is being produced from

- a) Carbon-14 b) nuclear fission c) petroleum combustion d) natural gas

33. The energy released by the decay of one U-235 atom will be of the order of

- a) 100 MeV b) 10 MeV c) 200 MeV d) 2000 MeV

34. One gram of uranium – 235 can give electrical energy equivalent to

- a) 0.5 MW b) 3 MW c) 1 MW d) 100 MW

35. Nuclear fusion uses the following as a fuel

- a) Carbon b) Helium c) Hydrogen d) water

36. Which of the following is used as moderator in the nuclear reactor?

- a) Graphite b) Helium gas c) Heavy water d) All of the above

37. Nuclear wastes is active for

- a) 5 years b) 10 years c) 50 years d) centuries

38. Chernobyl nuclear disaster occurred in the year

- a) 1984 b) 1952 c) 1986 d) 1987

39. The Chernobyl nuclear disaster occurred in a power plant at Ukraine was in

- a) December 1986 b) June 1986 c) April 1986 d) October 1986

40. Nuclear power plant in Karnataka is located at

- a) Bhadravathi b) Sandur c) Raichur d) Kaiga

41. Biomass consists of

- a) Lignin b) Hemi cellulose c) Cellulose d) All of the above

42. Biogas is produced by

- a) Microbial activity b) Harvesting crop c) Both a & b d) None of the above

43. Biomass power generation uses

- a) Crops b) Animal dung c) Wood d) All of these

44. Most popular biogas plants in rural India have a capacity of

- a) $0.5 \text{ m}^3/\text{day}$ b) $3 \text{ m}^3/\text{day}$ c) $10 \text{ m}^3/\text{day}$ d) $25 \text{ m}^3/\text{day}$

45. Percentage methane content of biogas is

- a) 5.5 b) 85 c) 55 d) 0.55

46. Biogas is gaseous fuel composed mainly of

- a) Methane and Carbon dioxide b) Methane and hydrogen sulphide
c) Methane and carbon monoxide d) None of the above

47. Biomass energy in green plants is produced in presence of

- a) Carbon dioxide b) Water c) Sunlight d) All of the above

48. Which is the source of energy that can be replaced at the same rate at which it is used?

- a) Coal b) Petroleum c) Oil d) Biomass

49. Cow Dung can be used

- a) as Manure b) for production of Bio gas c) as fuel d) all of the above

50. Sulabh biogas plants are based on the use of

- a) Human excreta b) Cattle dung c) Agriculture waste d) None of these

51. India's position in bio gas plants globally

- a) 5th b) 2nd c) 4th d) 7th

52. Molasses from sugar industry is used to generate

- a) Biodiesel b) Hydrogen c) Bioethanol d) Biomethanol

53. Electromagnetic radiation energy is an energy in the form of

- a) Light b) Wave c) Heat d) All these

54. The source of Electromagnetic radiation is

- a) Sun b) Wind c) Tide d) Water

55. Electromagnetic radiation propagates energy with a velocity of

- a) 3×10^6 m/sec b) 3×10^8 m/sec c) 3×10^{10} m/sec d) 3×10^{12} m/sec

56. Direct conversion of solar energy is attained by

- a) Solar photo voltaic system b) Solar diesel hybrid system
c) Solar thermal system d) solar air heater

57. The quantity of solar energy received by the earth is

- a) 5% b) 15% c) 99% d) 45%

58. Solar energy is stored in

- a) Carbon-carbon bonds b) Green leaves c) Fossil fuels d) Biomass

59. Electromagnetic radiation can cause

- a) Plague b) Malaria c) Cancer d) Dengue Fever

60. Energy obtained from Earth's hot interior is called

- a) Thermal energy b) Biomass energy c) Geo-thermal energy d) None of these

61. „OTEC“ is an energy technology that converts

- a) Energy in large tides of ocean to generate electricity
b) Energy in ocean waves to generate electricity
c) Energy in ocean due to thermal gradient to generate electricity
d) Energy in the fast moving ocean currents to generate electricity

62. Hydropower potential of India is estimated to be

- a) 4×10^{11} MW hours b) 4×10^{11} kW hours c) 40×10^{11} kW hours d) 4×10^{11} MW hours
a) 350^0 C – 500^0 C b) 30^0 C – 50^0 C c) 85^0 C – 150^0 C d) None of these

63. In Hydropower plants power is generated by

- a) Hot springs b) Wind c) Sun d) Water

64. Mini hydro-power plants can generate energy upto

- a) 100 MW b) 1000 MW c) 15 MW d) 500 MW

65. Which place in India the tidal energy has been experimented?

- a) Goa b) Karnataka c) Kerala d) Tamil Nadu

66. Tidal power plants are not preferred by environmentalists because

- a) Tidal power is a renewable source
b) Tidal power can be developed only in coasts
c) Tidal power stations bring about major ecological changes in sensitive coastal ecosystem
d) None of these

67. Which is considered as the energy of the future?

- a) Wind b) Hydrogen c) Ocean d) None of these

68. Problems of Hydrogen fuel cell is

- a) storage and distribution b) availability of hydrogen c) creates pollution d) None of the above

69. Hydrogen can be produced commercially by

- a) Cracking of ammonia b) Electrolysis of water c) Both a & b d) Gasification

70. Hydrogen is found on earth in combination with

- a) Sulphur b) Helium c) Copper d) Oxygen

71. Hydrogen energy can be tapped through

- a) heat pumps b) fuel cells c) photovoltaic cells d) gasifiers

72. The sources of Hydrogen are

- a) Biomass b) Coal c) Water d) All these

73. Which of the following is considered as an alternate fuel?

- a) CNG b) Kerosene c) Coal d) Petrol

Module 3

- 1. Environmental pollution is due to**
a) Rapid Urbanization b) deforestation c) Afforestation d) a & b
- 2. The human activity, among the following, which causes maximum environmental pollution having regional and global impact is**
a) Agriculture b) urbanization c) Industrialization d) Mining
- 3. Which of the following source is surface water?**
a) Springs b) Streams c) Deep wells d) All
- 4. Domestic sewage is**
a) Waste water generated from kitchens and bathrooms b) Waste water generated from industries
c) Waste water from residential areas d) None of these
- 5. The term Refuse generally which does not include is**
a) Putrescible solid waste b) Excreta c) Non Putrescible solid waste d) none
- 6. Which of the following is a point source of water pollution?**
a) Factories b) Sewage treatment plants c) Urban and Sub-Urban lands d) a and b
- 7. Which of the following are natural sources of environmental pollution?**
a) Automobiles b) Sewage c) Earth quake d) Industries
- 8. Which of the following is a non point source of water pollution?**
a) Factories b) Sewage treatment plants c) Urban and suburban lands d) All of the above
- 9. Non-point source of water pollution is caused by**
a) Pipes b) Sewers c) Ditches d) Mining wastes
- 10. Which of the following are biodegradable pollutants?**
a) Plastics b) Domestic sewage c) Detergent d) All
- 11. Which of the following is not a pollutant causing water pollution?**
a) Biodegradable organic waste b) Non biodegradable organic chemicals
c) Inorganic substances d) None of these
- 12. The liquid waste from baths and kitchens is called**
a) Sullage b) Domestic sewage c) Storm waste d) Run off
- 13. BOD Means**
a) Biochemical oxygen demand b) Chemical oxygen demand c) Biophysical oxygen demand d) All
- 14. BOD is a measure of**
a) Non biodegradable organic matter b) Biodegradable organic matter
c) Both a and b d) None of these
- 15. Physical pollution of water is due to**

- a) Dissolved oxygen b) Turbidity c) pH d) none of these

16. Bio-remediation means the removal of contaminants from

- a) Soil b) Waste water c) Groundwater d) Both Soil and Groundwater

17. Discharge of industrial wastes cause

- a) Depletion of dissolved oxygen b) Destruction of aquatic life
c) Impairing of biological activity d) All these

18. Which of the following is a major source of thermal pollution of water bodies?

- a) Sewage treatment plants b) Thermal power plants c) Solid waste disposal d) all

19. Which of the following industry generates colored waste?

- a) Software industry b) Textile industry c) Biomedical industry d) none

20. Smog is

- a) Natural phenomenon b) Combination of smoke and fog c) Colorless d) All of the above

21. Air pollution from automobiles can be controlled by fitting

- a) Electrostatic precipitator b) wet scrubber c) Catalytic converter d) all of the above

22. Air pollution control devices suitable for removing dust from air are

- a) Cyclone precipitators b) Fabric filters
c) Settling chambers d) Electrostatic precipitators

23. Which of the following statements about carbon monoxide is true?

- a) Forms complex with hemoglobin b) Forms complex with leg-hemoglobin
c) formed by the in-complete combustion of fossil fuels d) a and c

24. Which of the following is not a primary air pollutant?

- a) Oxides of Nitrogen b) Volatile organic compounds like hydrocarbons
c) Suspended particulate matter d) PAN

25. Which of the following is a secondary air pollutant?

- a) Carbon monoxide b) Sulphur dioxide c) Ozone d) Carbon dioxide

26. Longer exposure to NO₂ even in small concentrations may cause disease pertaining to

- a) Liver b) Lung c) Kidneys d) Heart

27. Which of the following gases is having maximum GWP? a) CFC b) N₂O c) CH₄ d) CO₂

28. The air pollutant which causes severe damage to plants, even at much lower concentration than what may be harmful to human health is

- a) Fluorine b) Ozone c) PAN d) None of these

29. Which of the following is major cause of soil pollution?

- a) Accident involving vehicles that are transporting waste materials
b) Pesticides and chemical fertilizers c) Improper solid waste disposal d) all of the above

30. "Minamata Disease" is caused due to

- a) Lead b) Arsenic c) Mercury d) Cadmium

31. Important sources of land pollution are

- a) Industrial wastes b) Agricultural practices c) Both (a) & (b) d) None of these

32. Which of the following is the source of fly ash?

- a) Vehicular exhaust b) sewage c) Thermal power plant d) All

33. Which of the following are non-biodegradable?

- a) Plastics b) Domestic sewage c) detergent d) a and c

34. Smog is combination of

- a) Smoke and fog b) Snow and fog c) Smoke and snow d) All these

35. Many people died in London during 1952 due to

- a) Smog b) Fog c) Mist d) Smoke

36. Smelting of metallic minerals into copper, lead and zinc release large amounts of

- a) Carbon dioxide b) Nitric Oxide c) Sulphur dioxide d) Hydrogen sulphide

37. The unit of measuring noise/sound is

- a) Decibels b) Joule c) ppm d) μs

38. Definition of Noise is

- a) Loud sound b) Unwanted sound c) Constant sound d) Sound of high frequency

39. Sound beyond which of the following level can be regarded as a pollutant

- a) 40 dB b) 80 dB c) 120 dB d) 150 dB

40. Blaring sounds known to cause

- a) Mental distress b) High cholesterol c) Neurological problems d) All of the above

41. Noise pollution is controlled by

- a) Reducing the noise at the source b) Preventing its transmission c) Protecting the receiver d) All

42. Noise pollution can be minimized by

- a) Urbanization b) Maintaining silence c) Reducing noise at source d) none

43. Noise pollution limits at residential area

- a) 45dB b) 80dB c) 55 dB d) 90 dB

44. Noise pollution limits in industrial area

- a) 45dB b) 80 dB c) 65dB d) 90 dB

45. The maximum average permissible noise levels during day time hours as per environment protection act in India is

- a) 30 dB b) 45 dB c) 50 dB d) 55 dB

1. Population explosion will cause

- a) Biodiversity b) Stress on ecosystem c) More employment d) None of these

2. Population explosion will cause

- a) Socio economic problems b) Food scarcity c) Energy crisis d) All these

3. In 1960 the world population was around

- a) 1 billion b) 3 billion c) 5 billion d) 7 billion

4. **The world population in 2000 was around**
a) 8 billion b) 6.1 billion c) 4 billion d) 4.5 billion
5. **Urban population of India as per census 2001 was**
a) 300 million b) 533 million c) 285.3 million d) 415 million
6. **Every year World's AIDS day is celebrated on**
a) December 1st b) December 10th c) December 14th d) December 23rd
7. **The primary reason for large scale decline in population death rate during 20th century was**
a) Improved environmental conditions b) Improved medical care and control of epidemics
b) Both a and b d) None of these
8. **Which of the following is having high population density?**
a) India b) China c) USA d) Western Europe
9. **The major cause of global population growth in the 18th and 19th centuries was**
a) Decreases in death rates b) Decrease in birth rates c) Industrial revolution d) None of these
10. **The average life expectancy around the world is currently**
a) Decreasing b) Increasing c) Not changing d) Stabilizing
11. **Which of the following is the problem not associated with population growth?**
a) Increase resource consumption b) Environmental pollution
c) Food and energy shortages d) None of these
12. **The major objectives of family welfare programs in India is**
a) Disease control b) Population growth rate control c) Employment generation d) None of these
13. **Population ageing is**
a) the increase in the average age of the population b) The result of decreased death and birth rates
c) The trend where more people live to reach old age while fewer children are born d) All of the above
14. **Which of the following is not population characteristic?**
a) Doubling time b) Total fertility rate c) Gross domestic product growth rate d) Infant mortality rate
15. **Demography is the study of**
a) Animals behavior b) Population growth c) River d) None of these
16. **Which of the following is the facility that the urban people enjoy?**
a) Better communication access b) Better quality of air c) Large land at cheap rates d) none of these
17. **Urbanization is**
a) Local environmental issue b) National environmental issue c) Both a & b d) Not at all an issue
18. **Which of the following is the ill effect of urbanization?**
a) Decrease in agricultural land b) Loss of greenery c) Loss of water bodies d) All these
19. **Which of the following is not the effect of urbanization?**
a) Air pollution b) Thermal pollution c) Solid waste production d) Noise pollution
20. **Which of the following is not a solution for global warming?**
a) Reducing fossil fuel consumption b) Planting more trees c) De-forestation d) None of the above

21. The meaning of global warming is

- a) Increase in the temperature of climate b) Planet hotter than earth c) Solar radiation d) Cooling effect

22. Global warming may bring about the following change in the climate of the earth

- a) Increase in the rain fall b) Desertification c) Drought d) All of the above

23. Which green house gas is known as colourless, non-flammable, sweetish odour and laughing gas?

- a) Methane b) CO₂ c) Nitrous Oxide d) Sulfur hexa fluoride

24. Green house effect causes

- a) Rise in temperature of earth b) Increase in rainfall c) Lowering of acid rain
d) Lowering of temperature of earth

25. Which of the following substantially reduces CO₂ emission from automobiles?

- a) Bio fuels like Ethanol and bio diesel b) Fossil fuels like coal and lignite
c) Nuclear element like Uranium d) Voltaic cells

26. Which of the following is an air pollutant?

- a) Carbon dioxide b) Oxygen c) Nitrogen d) Particulate matter

27. The number of people dying annually over the world due to indoor air pollution is of the order of

- a) 1 Million b) 1.5 Million c) 3 Million d) 5 Million

28. Which of the following substantially reduces CO₂ emission from automobiles?

- a) Bio fuels like Ethanol and bio diesel b) Fossil fuels like coal and lignite
c) Nuclear element like Uranium d) Voltaic cells

29. The major green house gas which is responsible for causing about 60% of the green house effect on earth among the following is

- a) Carbon monoxide b) Methane c) NO_x d) Carbon dioxide

30. The protocol that reduces green house gas emissions are

- a) Kyoto protocol b) Cartagena protocol c) Montreal protocol d) Vienna protocol

31. Which of the following is not a green house gas?

- a) Hydro chlorofluorocarbons b) Methane c) CO₂ d) SO₂

32. Global Warming could affect

- a) Climate b) Increase in Sea level c) Melting of glaciers d) All the above

33. Carbon dioxide reacts with moisture in the atmosphere forming

- a) H₂CO₂ b) H₂CO₃ c) COH₂ d) CaHCO₃

34. Which of the following is not a green house gas?

- a) Carbon dioxide b) Ozone c) Water vapour d) Sulphur dioxide

35. Climate and global air circulations are mainly affected by properties of

- a) Water and air b) Temperature c) Precipitation d) None of these

36. The natural disastrous events like volcanoes, earthquakes, cyclones bring about environmental changes which are

- a) Irreversible b) Reversible c) Both a and b d) None of these

37. Which among the following does not constitute a part of a good disaster management system?

- a) Rescue and evacuation b) Sheltering and Rehabilitation c) Execution and engineering works
d) None of these

38. The major automobile pollutants include

- a) CO, NO_x, Hydrocarbons and SPM, b) CO, NO_x, Hydrocarbons and CH₄
c) CO₂, NO_x, Hydrocarbons and SPM, d) CO, NO_x, Freon's and SPM

39. The pollution caused by transportation/vehicular activity depends on

- a) Type of vehicle engine b) Age of vehicle c) Traffic congestion d) All these

40. Petroleum based vehicles emit traces of

- a) CO & NO_x b) SPM c) Aldehydes d) CH₄

41. Heavy duty diesel vehicles contribute more

- a) NO_x b) Particulate matter c) CO d) Both a and b

42. Major pollutants from light petrol vehicles are

- a) CO and Hydrocarbons b) CO and NO_x c) CH₄ and CO₂ d) All the above

43. The 4-stroke engines produce less of the following as compared to 2-stroke engines

- a) CO and Hydrocarbons b) NO_x and SO₂ c) Both a and b d) None of the above

44. Alternative eco-friendly fuel for automobiles is

- a) Petrol b) Diesel c) CNG d) Kerosene

45. Green house gas emission from burning fuel in automobiles is around

- a) 16% b) 10% c) 20% d) 5%

46. Increase in asthma attacks has been linked to high levels of

- a) Nitrogen b) Oxygen c) Air-borne dust particles d) All the above

Module 5

1. The term acid rain was coined in the year

- a) 1952 b) 1852 c) 1652 d) 1752

2. The pH value of the acid rain water is less than

- a) 5.7 b) 7.0 c) 8.5 d) 7.5

3. The highest pH value of acid rain recorded was

- a) 4.5 b) 5.7 c) 7.2 d) 3.0

4. Acidity in rain is measured by

- a) Barometer b) Hygrometer c) Ammeterd) pH meter

5. The primary cause of the acid rain around the world is

- a) CFC b) SO₂ c) CO d) O₃

6. Acid rain affects

- a) Materials b) Plants c) Soil d) All these

7. Acid rains are more prominent in

- a) Temperate regions b) Tropical regions c) Arid regions d) Equally prominent in all regions

8. Which of the following is the remedial measure for acid rain?

- a) Reducing the release of oxides of nitrogen and sulphur in to the atmosphere b) Use of coal, free from sulphur c) Use of electrostatic precipitator & catalytic converters d) All of the above

9. Acid rain has been increasing day by day due to

- a) Urbanization b) industrialization c) increase in vehicle population d) none of the above

10. The major contributors to the acid rain are known as

- a) Precursors b) Processors c) Protons d) Pollutants

11. The important gaseous pollutants contributing to acid rain are

- a) SO₂ and NO_x b) CO₂ and H₂S c) NO_x and O₃ d) None of these

12. Acid rain can be controlled by

- a) Reducing S₀₂ and N₀₂ emissions. b) Reducing oxygen emission.
c) Increasing number of lakes. d) Increasing the forest cover.

13. Atmospheric oxidation of S₀₂ to S₀₃ is influenced by

- a) Sunlight. b) Humidity c) Presence of hydrocarbons d) All of these

14. Reduction in brightness of the famous Taj Mahal is due to

- a) Global warming. b) Air pollution c) Ozone depletion d) Afforestation.

15. Stone cancer or stone leprosy is caused by

- a) UV rays b) Green house effect c) Acid rain d) Ozone depletion

16. The effect of acid rain

- a) Reduces soil fertility. b) increases atmospheric temperature.
c) Causing respiratory problems d) skin cancer

17. Which of the following is not an ill effect of add rain?

a) results in killing fish b) causes stone leprosy c) leaches nutrients from the soil d) causes cataract.

18. The movement of nutrients from soil by acid rain is called

a) Infiltration b) Transpiration c) Leaching d) Exfiltration

19. The process of movement of nutrients from the soil by the Acid rain is called

a) Transpiration. b) Evapo- transpiration c) Leaching d) Infiltration.

20. Ozone layer is present in

a) Troposphere b) Stratosphere c) Mesosphere d) Thermosphere

21. Ozone layer thickness is measured in

a) PPM b) PPB c) Decibels d) Dobson Units

22. Normal average thickness of stratospheric ozone layer across the globe is around

a) 230 DU b) 300 DU c) 400 DU d) 500 DU

23. Formation of ozone layer is explained by

a) Rosenmund reaction b) Henderson's reaction, c) Chapman's reaction. d) Perkins's reaction

24. Which of the following statements about ozone is true?

- a) Ozone is a major constituent of photochemical smog b) Ozone protects us from the harmful UV radiation of sun c) Ozone is highly reactive d) All of the above

25. Major compound responsible for the destruction of stratospheric ozone layer is

- a) Oxygen b) CFC c) Carbon dioxide d) Methane

26. Each Chlorine free Radical can destroy the following number of ozone molecules.

- a) 1000 b) 10,000 c) 1,00,000 d) 100

27. Freons are

- a) HFC b) CFC c) NFC d) Hydrocarbons.

28. Chloro Fluro Carbon"s (CFC) are

- a) Non toxic b) Non flammable c) Non carcinogenic d) All the above

29. Ozone layers absorbs

- a) UV rays b) Infra red rays c) Cosmic rays d) CO

30. Ozone hole was first discovered over

- a) Arctic` b) Antarctica c) tropical region d) Africa

31. CFCs have been used as

- a) Solvent b) refrigerants c) blowing agents for polymer forms d) all of these

32. World Ozone day is being celebrated on

- a) September 5th b) October 15th c) September 16th d) September 11th

33. The international protocol to protect the Ozone layer is

- a) Vienna protocol b) Kyoto protocol c) Cartagena protocol d) Montreal protocol

34. Which of the following statements about ozone is true?

- a) Ozone is a major constituent of photochemical smog b) Ozone is highly reactive
c) Ozone protects us from the harmful UV radiation of sun. d) All of the above

35. Ozone depletion causes

- a) Snow blindness b) Photochemical smog c) acid rain d) vomiting

36. Which of the following statement is not true about animal husbandry?

- a) it is a part of agricultural activity. b) it is breeding, feeding and management of animals.
c) it is livestock production. d) it is protection of wild life

37. Which of the following is the purpose of animal husbandry?

- a) conservation of animal husbandry b) production of meat c) conservation of wildlife.
d) conservation of forests.

38. Domesticated animals are used for

- a) Dairy products. b) Production of fiber c) Production of meat d) All of these

39. Animal husbandry results in

- a) Global warming b) Acid rain c) Ozone depletion d) none of these

40. Live stock wastes release large amount of _____ into environment.

- a) NH_4 b) NH_3 c) NO_3 d) NO_4

41. The science of animal husbandry is called

- a) Plant science b) Soil science c) Animal science d) Human science

1. In which year did the Hon^{ble} supreme court of India made environment education compulsory subject at all levels of education?

- a) 2000 b) 2001 c) 2002 d) 2003

2. Environmental protection is the responsibility of

- a) Govt. of India b) NGOs c) Individual d) All

3. Earth Day is held every year on

- a) June 5th b) November 23rd c) April 22nd d) January 26th

4. World Environment day is on

- a) 5th May b) 5th June c) 18th July d) 16th August

5. Environmental (Protection) Act was enacted in the year

- a) 1986 b) 1992 c) 1984 d) 1974

6. The environment act was enacted by Indian parliament under article 253 of the constitution of India and made applicable to all states of India in the year

- a) 1974 b) 1981 c) 1986 d) 1989

7. The Air (Prevention & Control of Pollution) Act was enacted in the year

- a) 1981 b) 1996 c) 2000 d) 1974

8. The Water (Prevention & Control of Pollution) Act was enacted in the year

- a) 1986 b) 1974 c) 1994 d) 2004

9. The Wild Life Protection Act was enacted in the year

- a) 1986 b) 1974 c) 1994 d) 1972

10. The Forest (Conservation) Act was enacted in the year

- a) 1986 b) 1974 c) 1980 d) 1972

11. The first of the major environmental protection Act to be promulgated in India was

- a) The Wild Life Protection Act b) The Air Act c) The Noise Pollution Act d) None of the above.

12. Which is the first country to amend laws for punishment of crimes related to environmental pollution?

- a) Spain b) Brazil c) United states d) Japan

13. The Environmental (Protection) Act 1986 deals with:

- a) Water b) Air c) Soil d) All.

14. Environmental Protection is the fundamental duties of the citizen of India under the Article:

- a) 51-A b) 48-A c) 47 d) 21

- 15. The objective of the Wild Life (Protection) Act 1972 is:**
 a) To preserve the biodiversity b) To maintain essential ecological and life supporting systems
 c) Protection & conservation of wild life d) All
- 16. The Central Pollution Control Board was established under the provision of**
 a) Environmental (Protection) Act 1986 b) Air (Prevention & Control) Act 1981
 c) Water (Prevention & Control of Pollution) Act 1974 d) None of the above.
- 17. The Karnataka State Pollution Control Board (KSPCB) was established in the year**
 a) 1974 b) 1982 c) 1986 d) 1976
- 18. Which of the followings is NGO?**
 a) Narmada Bachao Andolan b) CPCB c) KSPCB d) None
- 19. Which of the following is empowered to take measures to protect & improve environment as per the Environment (Protection) Act?**
 a) Central Govt. b) State Government c) Corporation d) None
- 20. Which of the following is the authority to monitor industrial effluents?**
 a) Center for Science & Environment b) State Pollution Control Board
 c) Indian Environmental Association d) None
- 21. The leader of Chipko movement is:**
 a) Sunderlal Bahuguna b) Medha Patkar c) Vandana Shiva d) Suresh Heblikar
- 22. The Tiger Conservation Project was started in:**
 a) 1973 b) 1984 c) 1999 d) 2004
- 23. The goal of National Parks & Wild life Sanctuaries is**
 a) To promote international trading of animals & their products b) To evacuate tribal people from forest
 c) Conservation of Wild Life d) None of the above.
- 24. Environmental education is targeted to:**
 a) General public b) professional social groups c) Technicians & Scientists d) All
- 25. Which of the following animals is endangered species of India?**
 a) Black buck b) Elephant c) Fox d) Giraffe
- 26. Which State is having highest women literacy rate in India:**
 a) Karnataka b) Punjab c) Rajasthan d) Kerala
- 27. What is the percentage of women literacy rate of India according to census 2001?**
 a) 65% b) 55% c) 54.16% d) 75.85%
- 28. Which of the following was UN decade for women?**
 a) 1965 – 75 b) 1975 – 85 c) 1985 – 95 d) 1995 - 2005
- 29. An International Conference on Environmental Education was held in December 1982 at:**
 a) Kyoto b) Vienna c) New-Delhi d) London
- 30. First World Environmental Conference was held at**

- a) Stockholm, 5th June 1972 b) Johannesburg, 5th June 1972 c) Rio-de-jenero, 5th June 1992 d) none
- 31. Second World Environmental Conference was held at**
- a) Stockholm, 5th June 1972 b) Johannesburg, 5th June 1972 c) Rio-de-jenero, 5th June 1992 d) none
- 32. Third World Environmental Conference was held at**
- a) Stockholm, 5th June 1972 b) Johannesburg, 5th June 2002 c) Rio-de-jenero, 5th June 1992 d) none
- 33. The objectives of Integrated Child Development Services (ICDS) are:**
- a) Immunization b) Health check up & referral services
c) Pre-school and non-formal education d) All the above
- 34. The country which has the largest number of child labourers in the world is**
- a) India b) Bangladesh c) China d) Pakistan
- 35. The Pakistani boy, who while working for a NGO „Bonded Labour Liberation Front“, widely traveled Europe to convince customers not to buy Pakistani carpets because they were being prepared by poor children who worked overtime, who was later killed in 1995 was**
- a) Ehson Ullah Khan b) Iqbal Masiah c) Imran Khan d) None of these
- 36. ISO 14000 standards deal with:**
- a) Pollution Management b) Risk management c) Environmental Management d) none of the above
- 37. World summit on sustainable development was held at**
- a) Johannesburg in 2002 b) Rio de Janeiro in 1992 c) Kyoto in 1994 d) Stockholm in 2000
- 38. An important NGO involved in Global environmental protection is**
- a) UNICEF b) Green Peace c) WHO d) CPCB
- 39. The first International Earth Summit was held at**
- a) Johannesburg b) Rio de Janeiro c) Kyoto d) Stockholm
- 40. Silent Valley movement succeeded in**
- a) Waste management in sea coast b) Canceling the state government Hydel project and saving the Lion- Tailed Monkeys c) Promoting marine fishery business in Kerala d) None of the above
- 41. The committee which submitted its report to Government of India on Environmental education is**
- a) Tiwari Committee b) Mehta committee c) Banerjee Committee d) Agarwal Committee
- 42. The main objectives of family welfare programs in India is**
- a) Disease control b) Population growth control c) Employment generation d) None of these
- 43. How many Indian states have so far set up State Human Rights Commissions?**
- a) 12 b) 14 c) 16 d) 28
- 44. The Mahila Arthik Vikas Mandal (MAVIM) was setup in the year**
- a) 1955 b) 1965 c) 1975 d) 1985
- 45. The method of rain water harvesting which can be best adopted by local governments or panchayats is**

- a) construction of check dams across local streams
- b) construction of recharge trenches in village ponds and storm water drains
- c) creation of new water bodies like ponds
- d) all the above