

**Post Graduate Diploma in Environmental Monitoring and Impact Assessment**  
**Annual Examination – 2017**  
**Ecology and Environment**  
**Paper No.: PGDEMI-101**

*Time: Three hours*

Maximum Marks: 100

*Note: Attempt all questions from Section-A, any ten questions from section-B and any four questions from Section-C.*

**SECTION - A**

**Select correct answer**

1. Individuals of a species which occur in a particular area constitute
  - a) Flora
  - b) Fauna
  - c) Population
  - d) Community
  
2. Gaseous envelop that surrounds the earth planet is termed as:
  - a) Hydrosphere
  - b) Atmosphere
  - c) Biosphere
  - d) Chemosphere
  
3. Symbiotic relationship in which both the organisms of an association are benefited is called:
  - a) Mutualism
  - b) Parasitism
  - c) Commensalism
  - d) Nepotism
  
4. Herbivores are:
  - a) Primary consumers
  - b) Secondary consumers
  - c) Decomposers
  - d) Producers
  
5. The branch of ecology that deals with the biological relationship between an individual organism or an individual species and its environment is known as:

- a) Synecology
  - b) Autecology
  - c) Dendrology
  - d) Physiology
6. Which of the following statement best describes the climax community?
- a) More stable and more diverse
  - b) More stable and less diverse
  - c) Less stable and more diverse
  - d) Less stable and less diverse
7. The energy flow in an ecosystem is always:
- a) In any direction
  - b) Always unidirectional
  - c) Always bi-directional
  - d) Always down directional
8. A plant needing only a moderate amount of water is called:
- a) Xerophyte
  - b) Hydrophyte
  - c) Mesophyte
  - d) Neophyte
9. Successful establishment of a species in a bare area is known as:
- a) Nudation
  - b) Invasion
  - c) Migration
  - d) Aggregation
10. Number of individuals dying in a given period is termed as:
- a) Natality
  - b) Mortality
  - c) Density
  - d) Population dispersal

**SECTION – B**

Briefly discuss/comment upon **any ten**:

(5x10=50)

- 1. Principle of tolerance
- 2. Functions of ecosystem

3. Ecological pyramids
4. Types of ecosystems
5. Define food chain, food web and trophic levels
6. Describe the flow of energy in grazing food chain
7. Patterns of population dispersion
8. Exponential model of population growth
9. Types of succession
10. Giving one example of each define the terms mutualism, commensalism and parasitism
11. What is sere? Explain various seral stages.
12. Abiotic components of ecosystem
13. Type of species in an ecosystem
14. Describe the various layers of atmosphere
15. Briefly describe the lithosphere

#### SECTION - C

**Attempt any four**

(4x10=40)

1. What is natality and mortality? Describe the types of natality and mortality.
2. How does a succession occur on a bare land? Discuss briefly each stage.
3. Write an explanatory note on edaphic factors.
4. Describe the flow of energy in grazing food chain.
5. Define an ecosystem. Describe various components of a grassland ecosystem.

Your Roll No.....

**Post Graduate Diploma in Environmental Monitoring and Impact Assessment**

**Annual Examination – 2017**

**Paper Code: PGDEMIA – 102**  
**Paper Title: Environmental Legislation**

**Time: Three Hours**

**Maximum Marks: 100**

(Write your Roll Number at the top immediately on the receipt of question paper)

*Note: This paper is divided into three sections. Attempt all questions from Section-I, any ten questions from Section-II and any four questions from Section-III.*

**SECTION – I**

**Attempt ALL the objective type questions. Each question carries one mark. (10 marks)**

**Question – 1**

**(A) Choose the correct answer:**

- 1) The Air (Prevention and Control of Pollution) Act, was adopted on:**
  - a) 29 March, 1981
  - b) 30 March, 1981
  - c) 29 March, 1982
  - d) 30 March, 1982
  
- 2) Issues the ECOMARK notifications:**
  - a) BIS
  - b) DBT
  - c) DST
  - d) ISM
  
- 3) Public liability Insurance act was laid down in :**
  - a) 22 January, 1991
  - b) 22 March, 1981
  - c) 25 October, 1980
  - d) 23 May, 1986
  
- 4) Montreal Protocol sets limits on the production and consumption of:**
  - a) Chlorofluorocarbon
  - b) Halons
  - c) Both a and b
  - d) Lead

- 5) The treaty bans military activity, nuclear explosion and disposal of radioactive waste in regions:
- The Antarctica Treaty
  - Vienna Treaty
  - FAO Treaty
  - None of the above
- 6) The forest conservation act was laid down in :
- 1980
  - 1982
  - 1986
  - 1988
- 7) Application fee to be paid for obtaining ECOMARK is:
- Rs 500/- which is nonrefundable
  - Rs 1000/- which is nonrefundable
  - Rs 500/- which is refundable
  - Rs 1000/- which is nonrefundable
- 8) CITES stands for:
- The Convention of International Trade in Endangered species of Wild Flora and Fauna
  - The Convention of Indian Trade in Endangered species of Wild Flora and Fauna
  - The Convention of International Trade in Endangered species of cultivated Flora and Fauna
  - The Convention of Indo US Trade in Endangered species of Wild Flora and Fauna
- 9) Swachh Bharat Mission was launched throughout length and breadth of the country as a national movement on:
- 2<sup>nd</sup> October 2014
  - 2<sup>nd</sup> October 2015
  - 2<sup>nd</sup> October 2013
  - 2<sup>nd</sup> October 2016
- 10) GEN stands for:
- Global Eco-labeling Network
  - Global Eco-friendly Network
  - Government Eco-labeling Network
  - Government Eco-friendly Network

**SECTION – II**

Attempt ANY TEN questions. Each question carries five marks.

(50 marks)

- What are the legislations that have been enacted for controlling water pollution.
- Describe the restrictions of the de-reservation of forests / forests land for no forest purpose.

3. List out the rules related to trade/commerce in wild animals /animal articles and trophies described in Wildlife act, 1972.
4. What are the penalties for violation of various provisions of the Air Act, 1981.
5. Define the terms: Occupier, Trade effluent and sewage effluent as discussed in water pollution act.
6. Discuss the Environmental legislations in independent India before Stockholm conference (1972) was enacted.
7. What are the powers of Central Government under EPA for the protection of environment.
8. What restrictions does the Water Act impose on private citizens with respect to courts taking cognizance of offences under the water act.
9. Define: Taxidermy, Captive animal and wildlife, according to the wild life protection act (1972)
10. How are Accident, Handling and Hazardous substances defined under Public Liability Insurance Act.
11. Give the significance of: Lusaka Agreement and Ramsar Convention.
12. Expand: DOE, CPCB, SPCB, MoEF and IPC
13. What emergency measures can the Central/State pollution boards take under the Water Act, 1974.
14. Explain briefly the rules related to protection of specified plants.
15. What is the difference between convention and treaty. Justify the role of Bern and Vienna convention and FAO in global environmental protection.

#### SECTION - III

Attempt ANY FOUR questions. Each question carries ten marks.

(40 marks)

1. How air pollution can be controlled according to the Air act, 1981.
2. Mention the functions of the Central Board and State Board under the Water act, 1974.
3. Write the objectives ECOMARK scheme. What are the functions of three committees involved with award of Ecomark.
4. Describe the rules related to central zoo authority and recognition of zoos as mentioned in wildlife act (1972)
5. Give an account of Evolution of environmental concerns in five year plan of independent India.
6. Discuss the rules related to relief or claim under Public Liability Insurance Act.

Your Roll No.....

**P.G. Diploma in Environmental Monitoring and Impact Assessment**  
**Annual Examination- 2017**  
**Paper No: PGDEMI A – 103**  
**Instruments in Environment Monitoring**

Time: Three hours

Maximum marks: 100

(Write Roll No at the top immediately on receipt of this question paper)

**SECTION - A**

**Attempt all questions.**

**Choose the most appropriate option:**

**(1x20=20)**

1. pH range is in between  
a) 0-14                      b) 1-14                      c) 0-7                      d) 1-7
2. Buffers have the ability to  
a) change in pH  
b) resist change in pH  
c) no resist to change in pH  
d) all of the above
3. Separation of small molecule can be done by  
a) Viscometer  
b) Centrifugation  
c) Flow cytometry  
d) Spectrophotometer
4. Large proteins can be separated from smaller ones by using  
a) Ultrafiltration  
b) Microfiltration  
c) Macrofiltration  
d) All of the above
5. Fluorescent substance is used in  
a) Viscometer  
b) Centrifugation  
c) Flow cytometry  
d) Spectrophotometer
6. The amount of light absorbed by a material is proportional to the concentration of the absorbing solution is referred as  
a) Beer's law  
b) Boger-lambert law  
c) Poiseuille's law  
d) All of the above

7. Thin layer chromatography is
  - a) Partition chromatography
  - b) Adsorption chromatography
  - c) Electric mobility of ionic species
  - d) None of the above
8. In gas chromatography, the basis for separation of the components of the volatile material is the difference in
  - a) Partition coefficients
  - b) Conductivity
  - c) Molarity
  - d) Molecular weight
9. Ion exchange chromatography is based on the
  - a) Electrostatic attraction
  - b) Electrical mobility of ionic species
  - c) Partition chromatography
  - d) Adsorption chromatography
10. In isoelectric focusing, proteins are separated on the basis of their
  - a) Relative content of positive charged residue only
  - b) Relative content of negative charged residue only
  - c) Relative content of positive and negative charged residue
  - d) Size
11. Proteins can be visualized directly in gels by
  - a) Measuring their molecular weight
  - b) Using electron microscope only
  - c) Staining them with the dye
  - d) None of these
12. In an SDS- PAGE
  - a) Protein are denatured by SDS
  - b) Proteins have the same charge to mass ratio
  - c) Smaller protein migrate more rapidly through the gel
  - d) All of the above
13. Atomic Absorption spectroscopy consists of
  - a) Light Source
  - b) Atomizer
  - c) Monochromator and Detector
  - d) All of the above
14. In atomic Absorption spectroscopy, metals absorb ----- when they are excite by heat.
  - a) Ultraviolet light
  - b) X- rays
  - c) blue light
  - d) Infrared



15. Acrylic body rotameter of -----capacity is provided for measuring the flow rate of gas being sampled.
- 200 - 400 LPM
  - 0.2 - 0.6 LPM
  - 0.2 - 4.0 LPM
  - 0.2 - 2.0 LPM
16. The hopper main body made up of
- Aluminium
  - Copper
  - Zinc
  - Nickel
17. HPLC methods include
- Liquid/liquid (partition) chromatography
  - Liquid/solid (adsorption) chromatography
  - Ion exchange and size exclusion chromatography
  - all of the above
18. The differential pressure observed on the manometer is proportional to
- Flow rate
  - flux rate
  - sampler
  - none of the above
19. The most common type of detector in spectrophotometers is called
- Photomultiplier tube
  - Charged couple devices
  - Photodiode arrays
  - None of the above
20. Which of the instrument have proven standard for the analytical study of potassium, calcium, barium etc?
- Atomizer
  - Flame photometry
  - Photomultiplier
  - AAS

**SECTION - B**

**Attempt any FOUR questions. All questions carry equal marks**

**(10 x 4 =40)**

- Define electrophoresis and describe electrophoresis principle and its applications?
- Discuss principle, construction and working of atomic adsorption spectroscopy.
- Write short note on:
  - Spectroscopy
  - Transmittance
  - Absorbance
  - Wavelength selector
  - Principle of constant flow control
- Discuss principle, instrumentation and applications of centrifuge.
- Differentiate between the electronic and mechanical balance.
- Discuss principle, design, calibration and operation of pH meter.

**SECTION - C**

**Attempt any FOUR questions. All questions carry equal marks**

**(10 x 4 =40)**

1. Differentiate between Thermal conductivity detector and flame ionization detector.
2. Discuss Principle and instrumentation of HPLC.
3. Discuss principle and working of flame photometer.
4. Write a principle of operation and a brief note on various parts of a high volume sampler.
5. Write a brief note on polyacrylamide matrix and agarose matrix.
6. What is chromatography? Briefly describe the principle of ion exchange chromatography and instrumentation of Gas chromatography.

Your Roll No.....

Post-Graduate Diploma in Environmental Monitoring and Impact Assessment  
Annual Examination 2017  
Paper No. PGDEMA-104: Environmental Pollution and Quality Standards

Time: Three Hours

Total Marks: 100

Write your Roll No. on the top immediately on receipt of this question paper.

**SECTION-I**

Attempt all question. Each question carries one mark. (1x10)

1. Bharat Stage-II norms are,
  - a) Vehicular emission norms
  - b) Industrial gases emission norms
  - c) Green house gases emission norms
  - d) All of the above
2. The designated best use of SW – II sea water is,
  - a) Bathing, Contact Water Sports and Commercial fishing
  - b) Harbour
  - c) Navigation and Controlled Waste Disposal
  - d) Salt pans, Shell fishing, and Ecologically Sensitive Zone
3. The designated best use of SW –IV sea water is,
  - a) Bathing, Contact Water Sports and Commercial fishing
  - b) Harbour
  - c) Navigation and Controlled Waste Disposal
  - d) Salt pans, Shell fishing, and Ecologically Sensitive Zone
4. Fertilizer from a field is carried into a river stream or lake by rain in the form of for run-off, causing water pollution. This nature of source of water pollution is,
  - a) Non-point source
  - b) Point source
  - c) Both
  - d) None
5. Which of the following NO<sub>x</sub>gases has the maximum health hazard?
  - a) NO
  - b) N<sub>2</sub>O
  - c) NO<sub>2</sub>
  - d) N<sub>2</sub>O<sub>5</sub>
6. Which gas affects the health of human being by combining with hemoglobin?
  - a) CO
  - b) CO<sub>2</sub>
  - c) NO<sub>2</sub>
  - d) SO<sub>2</sub>
7. National Ambient Air Quality Standards (NAAQS) for most of the air pollutants except CO are,
  - a) Annual and 24 hour basis
  - b) Annual and weekly basis
  - c) Annual and monthly basis
  - d) Annual basis only

P. T. O.

:: 2 ::

8. Standard criteria for bacteriological quality of drinking water are,
- No sample contain *E. coli* in 100 ml
  - No sample should contain more than 10 coil form organisms per 100 ml
  - Coil form organisms should not be detectable in 100 ml of any two consecutive samples
  - All the above
9. According to standard chemical quality criteria of drinking water (ICMR limits), the *dissolved solids* should be,
- |             |             |
|-------------|-------------|
| a) 500 mg/l | b) 300 mg/l |
| c) 200 mg/l | d) 100 mg/l |
10. The government programmes for educating children about their immediate environment and impart knowledge about the eco-systems, their inter-dependence and their need for survival is:
- |          |             |
|----------|-------------|
| a) NEAC  | b) Eco Club |
| c) GLOBE | d) None     |

#### SECTION-II

Attempt any TEN questions. Each question carries 5 marks. (5x10)

- Differentiate between Suspended Particulate Matter (SPM) and Respirable Particulate Matter (RSPM) or PM10.
- Describe the signs of polluted water.
- Write a brief note on water quality standards.
- Write short note on acid rain.
- What are the causes of Vehicular pollution?
- Differentiate between good and bad ozone.
- What does green color of water indicate?
- What are the main pollutants in industrial waste water effluent?
- What is eutrophication?
- What are the objectives of water quality?

#### SECTION-III

Answer any FOUR questions. (10x4)

- What are the main causes of air pollution?
- What are the main effects of noise pollution on human beings? How does the noise pollution be controlled?
- When Earth Summit was held and what was the objective? Give some evidence of rapid climate changes.
- Describe in detail importance of mangroves in climate change and major threats to them
- What are landfills? How they cause ground water pollution?
- Describe causes and history of acid rain. Discuss its effects.
- What is importance of conserving biodiversity

POST GRDUTAE DIPLOMA in Environmental Monitoring and Impact Assessment  
Annual Examination 2017

PGDEMIA-201  
Contaminated Lands and Remediation

Time: 3 hrs

Max Marks 100

All questions from sections I, II and III are **COMPULSORY**

**SECTION I**

Answer **ALL** the objective type questions. Each question carries one mark  
(10 X 1 = 10 marks)

1. Section 6, 8 and 25 of the environment (protection) Act of 1986, are related to
  - i. Wetlands Management
  - ii. Wastelands Management
  - iii. Hazardous wastes Management
  - iv. Reduction in soil pollution
2. Development has
  - i. Only positive effects
  - ii. Only negative effects
  - iii. Both types of effects
  - iv. No effects
3. Weight of the soil per unit volume, known as
  - i. Bulk density
  - ii. Soil porosity
  - iii. Soil profile
  - iv. Soil texture
4. Department of Environment (DOE) was set up as a result of recommendations of:
  - i. Tiwari committee
  - ii. Seventh Five year plan
  - iii. MoEF
  - iv. Pollution Control Board
5. "Agenda 21" is a document prepared at
  - i. Earth summit at Rio de Janeiro
  - ii. MoEF
  - iii. Pollution Control Board
  - iv. Watershed Authority
6. Which of the following is a tool for measuring the impact of a project on environment?
  - i. Environmental Graph
  - ii. EnvironmentImpactAssesment (EIA)

- iii. Environment Management
- iv. Environment protection Law

7. ISO stands for

- i. Indian Standard Organisation
- ii. International Standard Organisation
- iii. Indian Spectrum Organisation
- iv. International Smart Organisation

8. RAMSAR convention identifies

- i. Wet lands
- ii. Soil pollution
- iii. Wastelands
- iv. Hazardous wastes

9. Which of these is a standard that seeks to protect the environment?

- i. ISO 9000
- ii. ISO 4000
- iii. ISO 14001
- iv. ISO 10000

10. An environment audit for development project in India has to be submitted by

- i. 15<sup>th</sup> July
- ii. 31<sup>st</sup> March
- iii. 31<sup>st</sup> July
- iv. 31<sup>st</sup> December

## SECTION II

Explain on *Any TEN*

10x5=50 Marks

- 1. Acid soil
- 2. Dehalogenation
- 3. Soil Bulk density
- 4. Bio-piles
- 5. Phyto-remediation
- 6. Corrosive wastes
- 7. Bioventing
- 8. Humic content
- 9. BOD and COD
- 10. Eutrophication and oligotrophication
- 11. Biomagnifications
- 12. DDT as soil pollutant
- 13. Sources of hazardous Wastes
- 14. Soil profile
- 15. Soil Salinity

### SECTION III

Answer any **FOUR**  $4 \times 10 = 40$

1. Describe different techniques involved in soil remediation with suitable examples.
2. What are wetlands. Discuss it with Indian scenario in terms of wetland conservations.
3. Differentiate between in situ and ex situ treatment of bioremediation.
4. What are the various initiatives taken by Government for hazardous waste management?
5. What are the types of wastelands? Discuss in detail.
6. How soil does get polluted? Write five harmful effects of soil pollution.

Post Graduate Diploma in Environmental Monitoring and Impact Assessment

Annual Examination – 2017  
PGDEMI A- 202  
Air Quality Monitoring

Time: Three hours

Max. Marks: 100

*Note: This paper is divided into three sections. Attempt all questions from section-I, any six questions from section –II any five questions from section-III*

SECTION – I

[1×20=20]

1. Which of the following is commonly used as adsorbent  
a. Activated carbon  
b. Resins  
c. Metallic oxides  
d. All of the above
2. The principal source of volatile organics (Hydrocarbons) is  
a. Transportation  
b. Industrial processes  
c. Stationary fuel combustion  
d. Volcanoes
3. The National Air Quality Monitoring Programme Network was established during  
a. 1985-85  
b. 1986-86  
c. 1984-84  
d. None of the above
4. Ozone is found in  
a. Mesosphere  
b. Ionosphere  
c. Stratosphere  
d. Exosphere
5. The rate at which dry air cools as it rises is called  
a. Conduction  
b. Dry adiabatic lapse rate  
c. Superadiabatic conditions  
d. Subadiabatic conditions



6. Which of the following is an air measuring device?
  - a. Aspirators
  - b. Rate meters
  - c. Vacuum pumps
  - d. None of the above
  
7. Cryogenic sampling is also called
  - a. Non- quantitative adsorption
  - b. Non- quantitative desorption
  - c. Cold trapping technique
  - d. Absorption sampling
  
8. Materials used for organic compound sampling include
  - a. Silica
  - b. Polytetrafluoroethylene
  - c. Charcoal
  - d. Phosphorus
  
9. Mechanism that is generally used to control gaseous air pollution
  - a. Absorption of pollutant into liquid
  - b. Adsorption of pollutant on to a solid
  - c. Chemically changing of pollutant into a harmless gas
  - d. All of the above
  
10. Floating bed scrubbers arrest the particles by virtue of
  - a. Mass of the particles
  - b. Weight of these particles
  - c. Velocity of these particles
  - d. Density of these particles
  
11. Repeatability and reproducibility are closely related to
  - a. Accuracy
  - b. Precision
  - c. Both (a) and (b)
  - d. None
  
12. Calibration Verification Standard (CVS) must be within true value of
  - a. 15%
  - b. 5%
  - c. 20%
  - d. 10%
  
13. Wet sieving method is useful for sieving materials below
  - a. 78
  - b. 74
  - c. 76
  - d. 87

14. All are particulate pollutants except
- Dust
  - Ozone
  - Soot
  - Smoke
15. The most commonly used statistical diameters are
- Feret's diameter
  - Martin's diameter
  - Both (a) and (b)
  - Only (a)
16. Primary pollutants of air are
- $\text{NO}_x$
  - $\text{SO}_x$
  - He
  - All of the above
17. Ozone is formed in the upper atmosphere by a photochemical reaction with
- Ultra violet solar radiation
  - Infra red radiation
  - Visible light
  - All of the above
18. Particulate pollutants are
- are small solid particles and liquid droplets
  - liquid droplets in atmosphere
  - are small solid particles released into the atmosphere
  - all of these
19. Fine organic or inorganic particles suspended in air is called
- Particulate pollutant
  - Gaseous pollutant
  - Aerosol
  - None of these
20. The true statement about 'green house effect' is that it is
- Caused by combination of many gases
  - Caused by  $\text{CO}_2$
  - Caused only by  $\text{CO}_2$ , CFC,  $\text{CH}_4$  and  $\text{NO}_2$  gases
  - None of these

## SECTION – II

Answer ANY SIX questions. Each Question carries 5 marks.

[5×6=30]

1. Briefly discuss horizontal and vertical dispersion of pollutants?
2. Differentiate between absorption and adsorption sampling?
3. What are the steps involved in calibration of UV/VIS Spectrophotometer?
4. How the particle size is evaluated by optical microscopy?
5. Write down the classification of particulate emission?
6. What are the various modes of heat transfer?
7. What are the harmful effects of particulate pollution on respiratory system?
8. Write down the limitations of air quality monitoring?

## SECTION – III

Answer ANY FIVE questions. Each Question carries 10 marks.

[ 10× 5= 50]

1. Explain sampling of organic compounds? How infra-red and flame ionization detectors helps in analysis of organic compounds?
2. Identify and classify the gaseous pollution? Explain the analysis and calculation of Sulphur dioxide?
3. Describe in detail different gas sampling systems? How Bubblers and Impingers are designed to trap specific atmospheric gases in a solution?
4. Explain quality assurance and quality control? Outline the factors governing air quality monitoring programs?
5. Describe in detail the various methods of air pollution control? What are the planning measures for air pollution control?
6. Define sampling. What are the important criterions for sampling of a particulate material?
7. Discuss various gas measurement devices? Write in detail the collection and evaluation of particulate matter?

Post Graduate Diploma in Environmental Monitoring and Impact Assessment  
Annual Examination – 2017  
PGDEMA – 203

Water Quality Monitoring

Time: Three Hours

Maximum Marks: 100

Note: This paper is divided into Three sections. Attempt All questions in section – I, any Ten questions in section – II and any Four questions in section – III.

Section - I

Attempt All the objective type questions. Each question carries ONE mark.

(10x1=10)

1. Which is the surfactant in a biodegradable detergent?
  - b) ABS
  - c) LAS
  - d) PTS
  - e) PSS
2. Which is the slimeicide used in cooling tower water?
  - a) TBT
  - b) TNT
  - c) Cyanide
  - d) MTBE
3. Excess of sodium in drinking water causes
  - a) Diarrhea
  - b) Typhoid
  - c) Hypertension
  - d) Stomach pain
4. Iron in water can be removed by
  - a) Packed bed aerators
  - b) Preliminary treatment by storage.
  - c) Rapid sand filtration
  - d) Sedimentation
5. Species of protozoa known to have been transmitted by the ingestion of contaminated drinking-water include
  - a) *Clostridium botulinum*
  - b) *Entamoeba histolytica*
  - c) *Dracunculus medinensis*
  - d) *Ascaris helminthes*
6. Fluoride is generally added to water (1 mg/litre) in the form of
  - a) Hydrogen fluoride
  - b) Hydrofluosilicic acid

- c) Tetrabutyl ammonium hexafluorophosphate
  - d) Sodium fluoride
7. Radioactivity in water can be measured by using
- a) Geiger tubes
  - b) Proportional counters
  - c) Scintillating device
  - d) Ionization chamber
8. Polyphosphates are added to water to sequester
- a) Sodium ions
  - b) Calcium ions
  - c) Heavy metals
  - d) Micro-organisms
9. Weakly acidic cation exchangers have the following functional group
- a)  $-SO_3H^+$
  - b)  $-CO_2^-$
  - c)  $-N^+(CH_3)_3$
  - d)  $-N^+(CH_3)_3OH$
10. Herbicides can be removed from water by
- a) Lime treatment
  - b) Activated carbon treatment
  - c) Sequestration through filters
  - d) Sedimentation

#### Section - II

Write short notes on **any Ten** of the following, Each question carries **5 marks**

(10x5=50)

1. Bioclean
2. Biochemical oxygen demand.
3. Grey water recycling
4. Biosanitizer
5. Indicator organisms
6. Schmutzdecke
7. Cascade aerator
8. Rain water catchment and maintenance
9. Reverse osmosis
10. Minamata Catastrophe
11. Asbestos in water
12. Eutrophication

#### Section - III

Write an essay on **any Four** of the following. Each question carries **10 Marks**

(4x10=40)

1. DEWATS
2. Pesticides in water

3. Overview of municipal water treatment
4. Desalination of water
5. Monitoring of solids in waters

Your Roll No.....

Post-Graduate Diploma in Environmental Monitoring and Impact Assessment  
Annual Examination 2017  
Paper No. PGDEMI-204: Environmental Impact & Risk Assessment

Time: Three Hours

Total Marks: 100

Write your Roll No. on the top immediately on receipt of this question paper.

SECTION-I

Attempt all question. Each question carries one mark. (1x10)

1. Assessor in EIA is -
  - a) the person(s), agency or company responsible for preparation of the EIA.
  - b) the persons(s), agency or company responsible for approval of the EIA.
  - c) Both a and b
  - d) None of the above
2. ISO 14000 family is primarily concerned with
  - a) Environmental management
  - b) Environmental pollution
  - c) Environmental audit
  - d) None of the above
3. Which is not TRUE -
  - a) LD 50 is the dose that is lethal for 50% of the experimental animals used.
  - b) LD 50 refers to lethal concentration rather than lethal dose.
  - c) LD 50 is the lethal concentration rather than lethal dose.
4. Some sources of secondary information in India for environmental impact prediction are -
  - a) Ministry of Environment and Forests.
  - b) Central Pollution Control Board.
  - c) Geological Survey of India.
  - d) All the above.
5. According to principle.....of Rio Declaration and Agenda 21, environment impact assessment, as a national instrument, shall be undertaken for proposed activities to have significant adverse impact on the environment and are subject to a decision of a competent national authority.
  - a) 17
  - b) 16
  - c) 18
  - d) 15
6. The phrase Environmental Impact Assessment comes from --
  - a) National Environmental Policy Act (NEPA), 1969
  - b) Environmental protection act
  - c) Forest conservation act
  - d) Public liability act
7. Category I projects includes --
  - a) Projects that require clearance from Central Government.
  - b) Projects that require clearance from State Government.

- c) Projects which do not require an EIA.
  - d) Projects that require clearance from both state and Central Government.
8. "Dosis facit venenum" was written by –
- a) Paracelsus
  - b) Linneaus
  - b) Aristotle
  - d) None of the above
9. Process of impact mitigation involves –
- a) Avoidance
  - b) Minimization
  - c) Compensation
  - d) All the above
10. The SPM consists of –
- a) mist and smoke
  - b) dust and fumes
  - d) both a and b
  - d) none of the above

#### SECTION-II

Attempt any TEN questions (5x10)

1. List out some of the projects grouped in category 3 for which EIA is not necessary
2. Depict with a flow chart various components of EIA.
3. Differentiate between rapid EIA and comprehensive EIA.
4. Discuss the procedure of extended screening during EIA.
5. What are the responsibilities of audit team leaders?
6. What is the difference between ISO 9000 and ISO 14000?
7. Prepare a check list of enquiry during audit.
8. Briefly explain LD 50 and LC – 50.
9. What is geographical information system (GIS)?
10. How does the proposed ethanol plant alter the physical and biological environment?
11. Write various objectives for collecting baseline environmental data for any proposed site.
12. What is environmental mitigation plan?
13. Write some sources of secondary information in India for EIA.
14. What factors should be taken into consideration for the designing of an environmental audit program?
15. Who are stakeholders in scoping exercise?

#### SECTION-III

Answer any FOUR questions. (10x4)

1. Environmental impact assessment is essential for the promotion of sustainable development. Justify the statement.
2. Explain the pyramid of audit types
3. Elaborate on factors that affect the designing of audit programme.
4. What is category 1 project for EIA? Name few projects of this category.
5. Elaborate on approaches of conducting public consultation in EIA.
6. Write a detailed note on the evolution and history of EIA in India.