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M.Sc. – I (Semester – I) Examination, 2014
ENVIRONMENTAL SCIENCE (New) (Paper – III)
Environmental Statistics and Computer Applications

Day and Date : Wednesday, 19-11-2014
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 70

- Instructions:** 1) Answer **any five** questions.
2) **All** questions carry **equal** marks.
3) Question **1** is **compulsory**.
4) Answer **any two** questions from **2, 3, 4**.
5) Answer **any two** questions from **5,6,7**.
6) **Draw** neat and labelled diagrams **wherever** necessary.
7) Calculator is **allowed** for calculations.

1. Select correct answer among the following : 14

- 1) Computer memory consists of
A) RAM B) ROM C) PROM D) All of the above
- 2) The brain of any computer system is
A) ALU B) Memory C) CPU D) Control Unit
- 3) Hackers
A) All have the same motive
B) Break into other people's computers
C) May legally break into computers as long as they do not do any damage
D) Are people who are allergic to computers
- 4) Which part of the computer is directly involved in executing the instructions of the computer program ?
A) The scanner B) The main storage
C) The secondary storage D) The processor



- 5) PARAM is an example of
- A) Super computer B) PC
C) Laptop D) PDA
- 6) Sampling is simply a process of learning about the _____ on the basis of a sample drawn from it.
- A) Census B) Population C) Group D) Area
- 7) The _____ process would be required to ensure that the data is complete and as required.
- A) Tabulation B) Analysis C) Editing D) Ordering
- 8) Before any procedures for _____ are established, the purpose and the scope of the study must be clearly specified.
- A) Data analysis B) Data tabulation
C) Data collection D) Data selection
- 9) A pie diagram is also called
- A) Pictogram B) Angular diagram
C) Line diagram D) Bar diagram
- 10) What is the expected number of heads appearing when a fair coin is tossed three times ?
- A) 2.1 B) 1.5 C) 3.2 D) 4.1
- 11) Mean, Median and Mode are
- A) Measures of deviation B) Ways of sampling
C) Measures of central tendency D) None of the above
- 12) A statement about the value of a population parameter is called
- A) Null hypothesis B) Alternative hypothesis
C) Simple hypothesis D) Composite hypothesis
- 13) Level of significance α lies between
- A) -1 and $+1$ B) 0 and 1 C) 0 and n D) $-\infty$ to $+\infty$
- 14) The median of a series of numerical values is
- A) Equal to the average B) A graph or chart
C) A number D) A frequency table



2. Calculate the quartile deviation from the following data : **14**

Rainfall in mm	60 – 70	70 – 80	80 – 90	90 – 100	100 – 110	110 – 120	120 – 130	130 – 140	140 – 150	150 – 160
Number of days	2	7	12	28	42	36	18	10	4	1

3. Calculate the mean deviation from the following data : **14**

Rainfall in mm	140 – 150	150 – 160	160 – 170	170 – 180	180 – 190	190 – 200
Number of days	4	6	10	18	9	3

4. A) What is the importance of statistical techniques in environmental sciences ? **14**
B) Discuss concept of probability with suitable example.

5. Write short notes on the following : **14**
A) T-test and Chi-square test
B) Concept of correlation and regression.

6. Write in brief on the following : **14**
A) Characteristics of computer and its advances
B) Categories of softwares and its use in environmental sciences.

7. Write an account on the following : **14**
A) Input and output devise of computer
B) Types of memory and recent storage devices.



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**M.Sc. – I (Semester – I) Examination, 2014
ENVIRONMENTAL SCIENCE (New)
Paper – IV : Introduction to Geoscience**

Day and Date : Friday, 21-11-2014

Total Marks : 70

Time : 11.00 a.m. to 2.00 p.m.

- Instructions :** 1) **All** questions carry **equal** marks.
2) Attempt **five** questions.
3) Question **I** is **compulsory**.
4) Answer **any two** questions from questions no. **II, III, and IV**.
5) Answer **any two** questions from questions no. **V, VI, and VII**.
6) Draw **neat** and labeled diagrams **wherever** necessary.

I. Choose the correct answer :

14

- 1) Ozone layer is present in which layer ?
 - a) Stratosphere
 - b) Mesosphere
 - c) Troposphere
 - d) Ionosphere
- 2) There are many different types of animals plants and live in many different types of environment what term is used to describe this
 - a) Biotechnology
 - b) Biodiversity
 - c) Evolution
 - d) None
- 3) Sea level is expected to rise because of warmer climate due to the following
 - a) Oceans expand as they get warmer
 - b) Glacier and ice-sheets melt
 - c) Both the above
 - d) None of the above
- 4) Which is the biggest energy source on the surface of the earth ?
 - a) Coal
 - b) Solar radiation
 - c) Tides
 - d) All the above



- II. Explain important physical properties of minerals that are commonly studied for their identification. **14**
 - III. Describe the primary differentiation and internal structure of the earth. **14**
 - IV. Define Regolith. Describe different factors leads to formation of soil. **14**
 - V. Explain in short : **14**
 - a) Plutonic rocks
 - b) Classification of clouds.
 - VI. Write a note on : **14**
 - a) Mineral resources of Maharashtra
 - b) Ozone layer.
 - VII. Enumerate in brief : **14**
 - a) Mobility of elements
 - b) Forms of clouds.
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**M.Sc. – I (Semester – II) Examination, 2014
ENVIRONMENTAL SCIENCE (Paper – VII)
Water and Soil Pollution**

Day and Date : Thursday, 20-11-2014
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 70

- N. B :** 1) Answer **any five** questions.
2) **All** questions carry **equal** marks.
3) Question **1** is **compulsory**.
4) Answer **any two** essay questions from **2, 3, 4**.
5) Answer **any two** short note questions from **5, 6, 7**.
6) Draw **neat** and labeled diagrams **wherever** necessary.

1. Choose correct alternative for the following : 14

1) Pedology is nothing but the branch of science which deals with the study of _____

- a) Rocks b) Soil c) Water d) Crops

2) Soil erosion can be minimized by _____

- a) Overgrazing b) Afforestation
c) Removal of vegetation d) All of these

3) The fertility of soil is lost in _____

- a) Soil erosion b) Soil silting
c) Soil conservation d) Soil conversion

4) Among the following which soil is least porous ?

- a) Loam b) Clay c) Sandy d) Peaty

5) Which of the following is major pollutant causing water pollution ?

- a) Smoke b) Detergent
c) Ammonia d) Industrial waste



- 6) Natural water subjected to limestone is termed as _____
- a) Calcareous water b) Distilled water
c) Hard water d) None of these
- 7) Which is the uppermost horizon in soil profile ?
- a) A-horizon b) O-horizon
c) AO-horizon d) Z-horizon
- 8) The faecal indicator bacteria is _____
- a) Staphylococcus aureus b) Streptococcus faecalis
c) Echerichia coli d) Salmonella typhi
- 9) Coral reefs are vulnerable to _____
- a) Siltation b) Flood water
c) Nutrients d) Salt flow
- 10) Which process is not involved in chemical weathering of rocks ?
- a) Hydration b) Cation exchange
c) Leaching d) Crystallization
- 11) The main component of hydrosphere is _____
- a) Air b) Water c) Land d) Both a) and b)
- 12) The amount of water that can be absorbed by plants out of holdard is known as _____
- a) Echard b) Chesard
c) Holard d) None
- 13) Surface active agents are known as _____
- a) Builders chemical b) Surfactants
c) Detergents d) All of these
- 14) With growing population, the demand for fresh water is _____
- a) Constant b) Steadily increasing
c) Steadily decreasing d) All of these



2. Explain the difference between oligotrophic and eutrophic waters.
Describe the sequential process of eutrophication **14**
 3. What is meant by salinization and what are it's consequences ? How does salinization results from irrigation ? **14**
 4. How biomagnification of DDT in fishes and birds led to decline in their population. Write their long term effects ? **14**
 5. Write in short : **14**
 - a) Properties of water
 - b) Ground water pollution.
 6. Explain in brief : **14**
 - a) Soil formation
 - b) Atmospheric water interaction between atmosphere and hydrosphere.
 7. Write a note on : **14**
 - a) Utility and budget of water
 - b) Soil composition.
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**M.Sc. – II (Semester – III) Examination, 2014
ENVIRONMENTAL SCIENCE (Paper – IX)
Environmental Toxicology**

Day and Date : Friday, 14-11-2014
Time : 3.00 p.m. to 6.00 p.m.

Total Marks : 70

- N.B. :** 1) Answer **any five** questions.
2) **All** questions carry **equal** marks.
3) Question 1 is **compulsory**.
4) Answer **any two** essay questions from 2, 3, 4.
5) Answer **any two** short note questions from 5, 6, 7.
6) **Draw** neat labeled diagrams **wherever** necessary.

1. Fill in the blanks :

14

- 1) From the following which factor is affecting on toxicity.
a) Age b) Sex c) Dosage d) All the above
- 2) Biofertilisers are the biologically active products they also.
 - 1) Are microbial inoculants of bacteria, algae and fungi
 - 2) Include organic fertilizers
 - 3) Include symbiotic nitrogen fixers.Select the correct answer from the codes given below :
a) 1) 2) and 3) b) 2) and 3) c) 1) and 3) d) 1) and 2)
- 3) Rhizobia are able to enter into symbiotic relationship with
a) algae b) fungi c) lichens d) legumes
- 4) Which of the following is an asymbiotic nitrogen fixers ?
a) Rhizobium b) Anabaena
c) Azolla d) Azotobacter



- 5) Which of the following statements regarding biofertilizers is incorrect ?
- The use of biofertilizers is environment friendly
 - Azolla is the main source of algal biofertilizer in South and Southeast Asia
 - BGA inoculation with composite cultures of algal genera have been found more effective
 - None of the above
- 6) _____ is persist for more than 15 years in soil.
- Dicamba
 - DDT
 - Xylene
 - Toluene
- 7) _____ is aerobic, free living, fix nitrogen in non symbiotic association.
- Anabaena
 - Rhizobium
 - Azotobacter
 - Pseudomonas
- 8) Water hyacinth absorb cadmium from the bathing medium at the rate of
- 9.1 μ g/l
 - 2.5 μ g/l
 - 10 μ g/l
 - 6.1 μ g/l
- 9) _____ is the experimental induction of abnormalities.
- Carcinogenicity
 - Mutagenicity
 - Teratogenicity
 - All the above
- 10) Mycorrhiza is a symbiotic association of fungi with _____
- Lichens
 - Algae
 - Plants
 - None of the above
- 11) Fermentation is a process most often active under
- Anaerobic conditions
 - Aerobic condition
 - Moist condition
 - None of the above
- 12) The fermentation is generally carried out at
- 30 – 35 °C
 - 25 – 30 °C
 - 10 – 30 °C
 - 20 – 30 °C



- 13) The yeast cells used during fermentation are separated from the fermenter by
- a) Filtration
 - b) Centrifugation
 - c) Sedimentation
 - d) Both centrifugation and sedimentation
- 14) Which of the following pairs regarding substrate common microorganisms is correctly matched ?
- a) Glucose Escherichia coli
 - b) Whey..... Lactobacillus Pruchii
 - c) Sucrose.....Ash by a gossypii
 - d) None of the above
2. Discuss toxic response of different body system. **14**
3. Explain in brief the role of microorganism in production process of products medicines, organic acids, fuels. **14**
4. What is the concept and role of biotechnology in environmental science ? Write in detail use in pollution control and nature protection. **14**
5. Write a note on : **14**
- a) Apiculture
 - b) Hallucinogens.
6. Write in short : **14**
- a) Effects of toxicants on ecosystem.
 - b) Microbial degradation of chemical pesticides.
7. Explain in brief : **14**
- a) Important fermented food
 - b) Organic farming.
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M.Sc. – II (Semester – III) Examination, 2014
Solid Waste and Environmental Problems Associated With Major Projects
ENVIRONMENTAL SCIENCE (Paper – X)

Day and Date : Monday, 17-11-2014
Time : 3.00 p.m. to 6.00 p.m.

Max.Marks : 70

- Instructions:** 1) Answer **any five** questions as per the choices.
2) **All** questions carry **equal** marks.
3) Question No. **I** is **compulsory**.
4) Answer **any two** essay type questions from Q. **II, III and IV**.
5) Answer **any two** short type questions from Q. **V, VI and VII**.
6) **Draw** neat and labelled diagrams **wherever** possible.

I. Fill in the blanks :

14

- 1) Anaerobic digestion is process in which the organic compounds are reduced in the absence of oxygen to _____
 - a) CO₂ and Methane
 - b) CO₂ and Ethane
 - c) CO₂ and Butane
 - d) None
- 2) Fly ash is generated by _____
 - a) Nuclear power plants
 - b) Thermal power plants
 - c) Hydro-electric power plants
 - d) All the three
- 3) The plastic material found in municipal solid waste fall into _____ categories.
 - a) 2
 - b) 4
 - c) 5
 - d) 7
- 4) Following is a example of ionizing radiations _____
 - a) X-rays
 - b) Alpha-particles
 - c) Beta-particles
 - d) UV
- 5) In nuclear fusion reaction following element is used _____
 - a) Deuterium
 - b) Uranium
 - c) Plutonium
 - d) Iodine



- 6) Draft of the Municipal solid waste (Management and Handling) Rules were published by the MoEF in the year _____
a) 2005 b) 2002 c) 2000 d) 1999
- 7) Gamma radiations are _____
a) A type of electromagnetic radiation
b) Electrons released from nuclei
c) Neutrons
d) Protons
- 8) The best method of treating Bio Medical waste is _____
a) Incineration b) Composting
c) Burial in the ground d) Drying
- 9) The likely characteristics of hazardous waste is _____
a) Ignitability b) Corrosivity
c) Reactivity d) All three of the above
- 10) Pyrolysis process is _____
a) Highly Exothermic b) Highly Endothermic
c) Highly aerobic d) None
- 11) Specific weight of municipal solid waste is _____
a) Weight of material per unit volume
b) Weight of material
c) Volume of material
d) None
- 12) Gasification is the inversion of conversion of carbonaceous fuels into flammable gas mixture and it takes place at a temperature between _____
a) 200 – 250°C b) 400 – 450°C c) 450 – 700°C d) 700 – 850°C
- 13) Bhopal gas tragedy is due to leakage of _____
a) Methyl Isocyanate b) Potassium Isothiocyanate
c) Ethyl Isocyanate d) Sodium Isothiocyanate
- 14) In combustion process inorganic substances are oxidised to ash. On an average 1 ton of municipal solid waste gives _____
a) 0 to 1kgs of fly ash b) 1 to 5 kgs of fly ash
c) 25 to 35kgs of fly ash d) 100 – 145 kgs of fly ash



- II. Enumerate in brief methods of monitoring, control and disposal of radioactive waste. **14**
 - III. Explain the different types of solid waste and add a note on solid waste as source of raw material. **14**
 - IV. Discuss in details aerobic and anaerobic methods of treatment of municipal solid waste. **14**
 - V. Write short notes on : **14**
 - a) Measurement of radiation intensity
 - b) Characteristic of hazardous waste.
 - VI. Discuss in brief : **14**
 - a) Impact of solid waste on environment
 - b) Sources and types of radioactive waste.
 - VII. Write a small account of **14**
 - a) Disposal of biomedical waste
 - b) Responsibility of Muncipal authorities in Pollution control.
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M.Sc. – II (Semester – III) Examination, 2014
ENVIRONMENTAL SCIENCE (Paper – XI)
Noise Pollution, Industrial and Occupational Health

Day and Date : Wednesday, 19-11-2014
Time : 3.00 p.m. to 6.00 p.m.

Max. Marks : 70

- Instructions:** 1) Answer **any 5** questions.
2) **All** questions carry **equal** marks.
3) Question **1st** is **compulsory**.
4) Answer **any two** essay questions from **2, 3 and 4**.
5) Answer **any two** short note questions from **5, 6 and 7**.
6) Draw **neat** and labelled diagram **whenever** necessary.

1. 1) Sound cannot travel through _____ 14
a) Water b) Air c) Vacuum d) All of them
- 2) Noise pollution control rule _____
a) 2000 b) 2001 c) 2002 d) 2005
- 3) Day time for noise pollution as per standards is 6.00 AM to _____ PM.
a) 9 b) 10 c) 11 d) 12
- 4) _____ focus on the effects that chemicals have on human body.
a) Toxic chemicals b) Toxic dynamics
c) Toxic dose d) Toxic kinetics
- 5) Bhopal gas tragedy = _____
a) Ethyl cyanate b) Methyl cyanate
c) Methyl isocyanate d) Ethyl isocyanate
- 6) _____ caused by pressurised gas and liquids.
a) Toxicity b) Unhygiene c) Explosion d) All of them
- 7) Frequencies above _____ H₂ are known as ultrasonic waves.
a) 20,000 b) 1,20,000 c) 2,000 d) 12,000



- 8) Industrial area _____ and _____
a) 85 and 80 b) 95 and 90 c) 70 and 80 d) 75 and 70
- 9) _____ is the number of occurrences of a repeating event per unit time.
a) Wavelength b) Frequency c) Wave number d) Amplitude
- 10) Noise pollution damages _____ of animal.
a) Ears b) Nervous system
c) Both a) and b) d) None of them
- 11) Silence zone is an area comprising not less than _____ meters.
a) 100 b) 110 c) 150 d) 220
- 12) _____ is a property of wave.
a) Wavelength b) Amplitude c) Wave number d) Frequency
- 13) Sudden noise causes _____ in females.
a) Blood pressure b) Headache
c) Deafness d) Abortion
- 14) In TCCR principles T means = _____
a) Tendency b) Trend c) Transparency d) None of them
2. Write down the concept of sound. **14**
3. Explain the relationship between environmental health and industrial safety. **14**
4. Describe different physical agents and their productive measures. **14**
5. Write a note on : **14**
a) Effect of noise pollution on wildlife.
b) Temporary and permanent deafness.
6. Write in short : **14**
a) Industrial hygiene.
b) Health risk management.
7. Give a small account on : **14**
a) Safety policy
b) Safety rules.
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M.Sc. – II (Semester – III) Examination, 2014
ENVIRONMENTAL SCIENCE (Paper – XII)
Wastewater and Groundwater Pollution

Day and Date : Friday, 21-11-2014
Time : 3.00 p.m. to 6.00 p.m.

Max. Marks : 70

- N.B. :** 1) Answer **any five** questions.
2) **All** questions carry **equal** marks.
3) Question **1** is **compulsory**.
4) Answer **any two** essay questions from **2, 3, 4**.
5) Answer **any two** short note questions from **5, 6, 7**.
6) Draw **neat** and labelled diagrams **wherever** necessary.

1. 1) Physical pollution of water due to _____ **14**
a) Turbidity b) COD c) BOD d) Nitrate
- 2) Which of the following industry generates coloured wastes ?
a) Fertilizer b) Textile
c) Pharmacy d) Chemical Industry
- 3) Groundwater gets contaminated by _____
a) Industrial wastes b) Domestic wastes
c) None of these d) Due to a) and b)
- 4) The extent of ground water pollution depends on _____
a) Rock properties
b) Rainfall pattern
c) Distance from the source of contamination
d) All of above



- 5) The effluents from urban areas contain _____
- a) Pesticides
 - b) Chemical components
 - c) Detergents
 - d) None of these
- 6) Which of the following statements are correct ?
- a) Sewage does not contains nitrogen and phosphorus
 - b) The main source of nitrogen in water is the industrial effluent
 - c) Sewage contains large amount of phosphate based detergents
 - d) All are correct
- 7) ASP micro-organisms converts organic matter into low energy compound _____
- a) CaCO_3
 - b) NO_3
 - c) SO_2
 - d) CO
- 8) Which of the following source is responsible for thermal pollution of water ?
- a) Thermal power plants
 - b) Domestic sewage
 - c) Nuclear power plants
 - d) All of above
- 9) Which of the following statement is correct ?
- a) Eutrophication is due to excessive amount of phosphorus and nitrate in water bodies
 - b) Eutrophication discourages algae growth
 - c) Eutrophication enriches oxygen in water bodies
 - d) None of these
- 10) In groundwater calcium occurs due to the presence of _____
- a) Basalt
 - b) Limestone
 - c) Granite
 - d) None of these
- 11) Which of the following wastes often have higher BOD values than COD values ?
- a) Distillery wastes
 - b) Textile wastes
 - c) Pulp and paper wastes
 - d) None of above



- 12) Over exploitation of ground water resources may cause _____
- a) Recharge ground water levels
 - b) Protects from ingressing sea water in coastal areas
 - c) Depletes groundwater level
 - d) None of above
- 13) Which of the following is the anthropogenic source of organic matter in water ?
- a) Domestic sewages
 - b) Pulp mill effluent
 - c) Industrial by products
 - d) All
- 14) Which of the following impart a peculiar taste to water ?
- a) Decomposed organic matter
 - b) Pathogens
 - c) Algae, fungi and bacteria
 - d) All of above
2. Describe physico-chemical and biological characteristics of wastewater. **14**
3. What is Activated Sludge Process (ASP) ? Discuss its operation in detail. **14**
4. Write an essay on 'Concepts and Role of CETP (Common Effluent Treatment Plant). **14**
5. Write in short : **14**
- a) Sources of ground water pollution.
 - b) Fluorosis.
6. Write in short : **14**
- a) Collection and conveyance of sewage.
 - b) Treatment and disposal of sludge.
7. Write in short : **14**
- a) Effluent Treatment Plant (ETP).
 - b) Piper Diagram.
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M.Sc. – I (Sem. – I) Examination, 2014
ENVIRONMENTAL SCIENCE (New)
Fundamentals of Environment (Paper – I)

Day and Date : Friday, 14-11-2014
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 70

- Instructions :** 1) Answer **any five** questions.
2) **All** questions carry **equal** marks.
3) Question **1** is **compulsory**.
4) Answer **any two** essay questions from **2, 3 and 4**.
5) Answer **any two** short note questions from **5, 6 and 7**.
6) Draw **neat** and labelled diagrams **wherever** necessary.

1. Fill in the blanks :

14

- 1) _____ is the limiting factor for primary production in oceans.
a) Light
b) Oxygen
c) Nutrients
d) Plants
- 2) The region which is devoid of trees is called _____.
a) Alpine zone
b) Submontane zone
c) Temperate zone
d) Sub-tropical
- 3) In a food chain plants constitute _____.
a) First trophic level
b) Second trophic level
c) Intermediate trophic level
d) Ultimate trophic level
- 4) A primary succession in newly formed pond or lake starts from _____.
a) Submerged stage
b) Phytoplankton stage
c) Reed swamp stage
d) Woodland stage
- 5) At intermediate level of disturbance the diversity _____.
a) Decreases
b) Increases
c) Attains peak
d) Remains stable



13) The best source of energy in the environment is _____

- a) Soil
- b) Water
- c) Ponds
- d) Trees

14) Biotic environment includes _____

- a) Water
- b) Flora
- c) Soil
- d) Air

- 2. Describe the structural and functional aspects of ecosystem in detail. **14**
 - 3. Explain the population characteristics. **14**
 - 4. What is succession ? Describe the causes trends and types of succession. **14**
 - 5. Write brief account on : **14**
 - a) Ecological niche
 - b) Gaia hypothesis.
 - 6. Explain briefly : **14**
 - a) Biome
 - b) Survivorship curve.
 - 7. Enumerate the following : **14**
 - a) Biotic interactions
 - b) Soil profile.
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M.Sc. – I (Semester – I) Examination, 2014
ENVIRONMENTAL SCIENCE (New) (Paper – II)
Environmental Chemistry

Day and Date : Monday, 17-11-2014
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 70

- N. B. :** 1) Answer **any five** questions.
2) **All** questions carry **equal** marks.
3) Q. No. **1** is **compulsory**.
4) Answer **any two** essay questions from **2, 3, 4**.
5) Answer **any two** short note questions from **5, 6, 7**.
6) **Draw** neat and labeled diagrams **wherever** necessary.

1. Choose correct alternative for the following : 14

- 1) Acid rain is caused by
 - a) CO and CO₂
 - b) SO₂ and O₂
 - c) SO₂ and NO₂
 - d) NO₂ and O₂
- 2) The major source of anthropogenic sulphur dioxide in atmosphere is
 - a) Diesel
 - b) Petrol
 - c) Coal
 - d) Wood
- 3) Which of the mineral groups in the earth exist represent silicate group ?
 - a) Quartz, Olivine, Feldspar
 - b) Corundum, Quartz, Olivine
 - c) Feldspar, Corundum, Pyrite
 - d) Quartz, Olivine, Halite
- 4) The term acid rain was first referred by
 - a) Robert Cline in 1872
 - b) Robert Angus in 1872
 - c) Robert Angus in 1972
 - d) Robert Clive in 1972
- 5) The main pollutants causing acid rain are
 - a) Copper and Antimony
 - b) Sodium and Platinum
 - c) Nitrogen and Sulphur
 - d) Carbon and Silver
- 6) Minamata disease is caused by
 - a) As Vapour
 - b) Organic Hg
 - c) Hg Vapour
 - d) Dissolved As
- 7) The principal components of photochemical smog in urban areas are
 - a) SO₂ and NO₂
 - b) SPM and CO
 - c) SPM and NO₂
 - d) Hydrocarbon and Ozone



- 8) Lightening in the atmosphere produces
a) NO b) CO c) CO₂ d) NH₃
- 9) The spectrophotometry which law is used as the basis of this analytical techniques
a) Kirchoff's law b) Fleming's law
c) Beer's law d) Markonikow's law
- 10) Which metal can be analysed using flame photometer ?
a) Chromium b) Mercury
c) Sodium d) Lead
- 11) Acid rain has pH
a) < 7.6 b) >7 c) ≤ 5.6 d) <1.6
- 12) The molar concentration of pure water
a) 555.6 mole/l b) 55.56 mole/l
c) 565.6 mole/l d) 56.56 mole/l
- 13) Methamoglobinemia is caused by water pollution containing
a) NO₂ b) NH₄⁺ c) NO₃⁻ d) NO₂⁻
- 14) The maximum desirable limit (BIS) of lead in the drinking water is
a) 0.05 mg/l b) 0.09 mg/l c) 0.1 mg/l d) 1.0 mg/l
2. Explain with schematic diagram, the construction and working of single cell photoelectric colorimeter. **14**
3. Describe the toxicity of pesticides. **14**
4. Illustrate and explain the hydrological cycle. **14**
5. Write in short : **14**
a) Acid rain.
b) Lambert's law.
6. Explain in brief : **14**
a) Photochemical smog.
b) Physico-chemical parameters of water.
7. Write a note on : **14**
a) Soil nutrients.
b) Green house effect.
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