



- 11) Autoecology deals with \_\_\_\_\_
- a) Ecology of species
  - b) Ecology of many species
  - c) Ecology of community
  - d) All of the above
- 12) The maximum rate of growth of any population under ideal conditions is called \_\_\_\_\_.
- a) Exponential growth
  - b) Biotic potential
  - c) Exponential potential
  - d) Environmental growth
- 13) Plants can transform the energy in sunlight into organic molecules such as sugars, in a process called \_\_\_\_\_.
- a) Photosynthesis
  - b) Decomposition
  - c) Nitrogen fixation
  - d) Cellular respiration
- 14) The plants live in high temperature throughout the year are called as?
- a) Microtherm
  - b) Megatherm
  - c) Mesotherm
  - d) Hekiskotherm

- Q.2** What is ecosystem ecology? What are the different approaches to ecology based on level of organization of organisms? **14**
- Q.3** What is Environment? Explain its components in detail. **14**
- Q.4** What is ecological succession? Comment various features that characteristics a community. **14**
- Q.5 Write a short note on the following:** **14**
- A)** Environmental ethics
  - B)** Population characteristics
- Q.6 Write a brief with suitable illustration on the following** **14**
- A)** Structure and functional changes in typical hydrosere or xerosere.
  - B)** Liebig's law of minimum and shelford law of tolerance.
- Q.7 Write an account on the following:** **14**
- A)** Inter specific and intra specific relation
  - B)** Ecological Niche

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**M.Sc. (Semester - II) (CBCS) Examination Mar/Apr-2018**  
**Environmental Science**  
**BIODIVERSITY AND CONSERVATION**

Time : 2½ Hour

Max. Marks: 70

- Instructions:** 1) Answer any Five Question.  
 2) All Questions carry equal marks.  
 3) Question No. 1 is Compulsory.  
 4) Attempt any two from Q.No.2, 3 and 4.  
 5) Attempt any two from Q.No.5, 6 and 7.

**Q.1 Select the answer among the following:****14**

- 1) The Union Ministry of Environment and Forest has suggested species recovery action plans in the state to save- Great Indian Bustard, Lesser Florican and Bengal Florican. Which of the following statements with regard to these three birds are correct
  1. All these 3 birds are critically endangered according to IUCN Red list.
  2. Lesser Florican is mostly found in the Western part of India whereas Bengal Florican is found in the Eastern part of India.
  3. All the three birds belong to the Bustard family.
  - a) 1 & 2 Only
  - b) 1 & 3 Only
  - c) 2 & 3 Only
  - d) 1, 2 & 3 Only
- 2) The type of diversity including all the different kinds of living things found in a certain habitat is called as?
  - a) Species diversity
  - b) Genetic diversity
  - c) Ecosystem diversity
  - d) Population diversity
- 3) Which microorganism is responsible for synthesis of antibiotics?
  - a) Bacteria
  - b) Virus
  - c) Fungus
  - d) Algae
- 4) A taxon with restricted geographical distribution is termed as
  - a) Rare
  - b) Vulnerable
  - c) Endemic
  - d) Extinct
- 5) Conservation of biodiversity outside the natural habitat is called as :
  - a) Ex – situ
  - b) In – situ
  - c) Invasion
  - d) In – vivo
- 6) Which of the following does not come under the threatened categories?
  - a) Endangered
  - b) Vulnerable
  - c) Extinct
  - d) Least concern
- 7) Which is the correct option?
  - a) There is chance in Natural selection in evolution process due to alpha biodiversity
  - b) There is chance in Natural selection in process of evolution due to genetic diversity
  - c) There is chance in Natural selection in process of evolution due to Ecosystem biodiversity
  - d) There is chance in Natural selection in process of due to bio community diversity

- 8) How many protected areas are present in India?
  - a) 89
  - b) 581
  - c) 492
  - d) 34
- 9) Biosphere reserve has following zone except one:
  - a) Core zone
  - b) Command zone
  - c) Buffer zone
  - d) Spherical zone
- 10) In which of the following boundaries are not circumscribed:
  - a) Biosphere
  - b) Sanctuary
  - c) National park
  - d) Colony parks
- 11) In \_\_\_\_\_ type of wildlife management the wildlife is protected from hunting mainly during breeding season and is enforced by law and if violated is punishable and termed as illegal :
  - a) Closed season
  - b) Open wild-life season
  - c) Custodial management
  - d) Limited entry zone
- 12) The knowledge of which of the following factor does not help in the wildlife management.
  - a) Habitat of wildlife
  - b) Behavior of wildlife
  - c) Food habitat of wildlife
  - d) Name of wildlife
- 13) Biodiversity of which organism is more in Eastern Ghat in comparison to Western Ghat?
  - a) Reptilian
  - b) Amphibian
  - c) Aves
  - d) Mammals
- 14) What is Ecosystem diversity?
  - a) Similarity of Species diversity in Ecosystem
  - b) Variation in Species diversity in Ecosystem
  - c) Mutation in Species diversity in Ecosystem
  - d) Homozygosity in Species diversity in Ecosystem

- Q.2** Describe the characteristics of Biosphere reserves? Discuss any two Biosphere reserves in India? **14**
- Q.3** Write about the Wild-Life Management? Describe the types of Wild-Life Management? **14**
- Q.4** What do you mean by biodiversity index? With suitable example describe the Simpson's Index? **14**
- Q.5** **Write a short note on the following** **14**
  - a) Poaching of wildlife
  - b) Overexploitation of Biodiversity
- Q.6** **Write a brief with suitable illustration on the following** **14**
  - a) Gangetic plains
  - b) Biological Invasion
- Q.7** **Write an account on the following.** **14**
  - a) Integrated Protected area system
  - b) Mangroves Ecosystem in India

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**M.Sc. (Semester - II) (CBCS) Examination Mar/Apr-2018**  
**Environmental Science**  
**WATER AND WASTEWATER ENGINEERING**

Time : 2½ Hours

Max. Marks: 70

- Instructions:** 1) Answer any Five Question.  
2) All Questions carry equal marks.  
3) Question No. 1 is Compulsory.  
4) Attempt any two from Q.No.2, 3 and 4.  
5) Attempt any two from Q.No.5, 6 and 7.

**Q.1 Select the answer among the following.**

**14**

- 1) In a sludge tank, the gas mainly produced, is \_\_\_\_\_.
  - a) Oxygen
  - b) Nitrogen
  - c) Hydrogen
  - d) Carbon dioxide
- 2) For evaporation and measurement of settleable solids, the apparatus used, is \_\_\_\_\_.
  - a) A jar
  - b) A breaker
  - c) A test tube
  - d) An Imhoff cone
- 3) The grit chambers of sewage treatment plants, are generally cleaned after \_\_\_\_\_.
  - a) 2 days
  - b) 7 days
  - c) 12 days
  - d) 14 days
- 4) Kjeldahl nitrogen is a mixture of \_\_\_\_\_.
  - a) Ammonia and nitrogen
  - b) Nitrogen and organic nitrogen
  - c) Organic nitrogen and ammonia
  - d) All the above
- 5) In normal conditions, the period for sludge digestion, is \_\_\_\_\_.
  - a) 10 days
  - b) 20 days
  - c) 30 days
  - d) 60 days
- 6) Pick up the correct statement from the following:
  - a) Indore method of composting involves decomposition under aerobic conditions
  - b) Bangalore method of composting involves under anaerobic conditions
  - c) Fully stabilized refuse by the Bangalore method of composting is a powdery mass called humus
  - d) All of these
- 7) No treatment of the sewage is given if dilution factor is \_\_\_\_\_.
  - a) Less than 150
  - b) Between 150 to 200
  - c) Between 200 to 300
  - d) More than 500
- 8) A measure of oxidisable impurities present in the sewage is \_\_\_\_\_.
  - a) COD
  - b) BOD
  - c) Atmospheric oxygen
  - d) Ozone



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**M.Sc. (Semester - II) (CBCS) Examination Mar/Apr-2018**  
**Environmental Science**  
**REMOTE SENSING AND GIS IN ENVIRONMENTAL SCIENCE**

Time: 2½ Hours

Max. Marks: 70

- Instructions:** 1) Answer any Five Question.  
 2) All Questions carry equal marks.  
 3) Question No. 1 is Compulsory.  
 4) Attempt any two from Q.No.2, 3 and 4.  
 5) Attempt any two from Q.No.5, 6 and 7.

**Q.1 Select the answer among the following.****14**

- 1) Leaf reflectance depends primarily on
  - a) Internal cell structure
  - b) Equivalent water content
  - c) The pigments
  - d) All of these
- 2) The remote sensing techniques applied for the earth's surface feature is generally confined to the following wave lengths
  - a) 0.4 to 1.3, 1.5 to 1.8, 2.2 to 2.6  $\mu\text{m}$
  - b) 2.2 to 2.6, 3.0 to 3.6, 4.2 to 5.0  $\mu\text{m}$
  - c) 4.2 to 5.0, 7.0 to 15  $\mu\text{m}$  and 1 cm to 30 cm
  - d) All of these
- 3) Remote sensing techniques make use of the properties of \_\_\_\_\_ emitted, reflected or diffracted by the sensed objects.
  - a) Electric waves
  - b) Electromagnetic waves
  - c) Sound waves
  - d) Wind waves
- 4) The value of energy quantum for radiation of any frequency is proportional to \_\_\_\_\_.
  - a) The square of the frequency
  - b) The square root of the frequency
  - c) The frequency
  - d) The reciprocal of the energy
- 5) Pick up the correct statement from the following
  - a) Spatial resolution of the imaging system becomes poorer with increase of platform height
  - b) Platforms may be either stationary or mobile
  - c) Area coverage of the imaging system increases with the increase of the platform altitude
  - d) All the above
- 6) A perfectly black body
  - a) Is a diffuse emitter
  - b) Absorbs all the radiations of every wave lengths
  - c) Emits power of every wave length
  - d) All of the above

- 7) Which one of the following parameters is considered to determine the reflectance of a vegetation canopy
  - a) Look angle
  - b) Azimuth angle
  - c) Number and arrangement of leaves
  - d) All of these
- 8) Mapmakers use GIS to
  - a) Store geographic information
  - b) Use geographic information
  - c) View geographic information
  - d) Store, use, view geographic information
- 9) Information in GIS is entered and stored as
 

a) Panels	b) Layers
c) Single panel	d) Dual panel
- 10) User can use GIS to make
  - a) Complex analysis only
  - b) Display maps only
  - c) Complex analysis and Display maps
  - d) None of these
- 11) Which of the following is true
  - a) Nominal and categorical data values are referred to as qualitative data
  - b) Internal and ratio data is known as qualitative data
  - c) Ordinal data refers to a ranking scheme
  - d) All of the above
- 12) Examples of continuous fields are
 

a) Air temperature	b) Barometric pressure
c) Soil salinity	d) All of the above
- 13) Key components of spatial data quality include
 

a) Positional accuracy	b) Temporal accuracy
c) Lineage and completeness	d) All of the above
- 14) In the world of GIS another term for the property of connectivity is
 

a) Proximity	b) Neighborhood
c) Topology	d) Location

- |            |   |           |
|------------|---|-----------|
| <b>Q.2</b> | Discuss various modes of energy interaction of incoming radiations in remote sensing. | <b>14</b> |
| <b>Q.3</b> | What is remote sensing? Explain the elements of image interpretation.                 | <b>14</b> |
| <b>Q.4</b> | Examine the Utility of Geographic Information system.                                 | <b>14</b> |
| <b>Q.5</b> | <b>Write a short notes on the following:</b>  | <b>14</b> |
|            | a) Spatial and Non-spatial data   |           |
|            | b) Levels of measurement  |           |
| <b>Q.6</b> | <b>Write a brief with suitable illustration on the following:</b>                     | <b>14</b> |
|            | a) Describe the characteristics of region of electromagnetic spectrum.                |           |
|            | b) Explain advantages and disadvantages of air based platform.                        |           |
| <b>Q.7</b> | <b>Write an account on the following.</b>   | <b>14</b> |
|            | a) Raster data query  |           |
|            | b) Importance of topology   |           |



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**M.Sc. (Semester - III) (New) (CBCS) Examination Mar/Apr-2018**  
**Environmental Science**  
**ENVIRONMENTAL POLLUTION**

Time: 2½ Hours

Max Marks: 70

- Instructions:** 1) Attempt any five questions.  
 2) All Questions carry equal marks.  
 3) Question no.1 is compulsory.  
 4) Attempt any two questions from Q. No. 2, 3 and 4  
 5) Attempt any two questions from Q. No. 5, 6 and 7.

**Q.1 Select the answer among the following.****14**

- 1) Ozone hole Formation is maximum over \_\_\_\_\_.  
 a) Africa    b) Antarctica  
 c) Europe    d) India
- 2) Which are the reliable indicators of air pollutants (SO<sub>2</sub> and NO<sub>x</sub> gases)?  
 a) Ferns and Cycas                                b) Green algae and Aquatic liverworts  
 c) Lichens and Mosses                              d) Neem tree and Eichornia
- 3) Noise is measured in \_\_\_\_\_.  
 a) Hertz    b) Decibel  
 c) Joule    d) Sound
- 4) Background noise in the ambient environment is represented by \_\_\_\_\_.  
 a) L<sub>10</sub>    b) L<sub>50</sub>  
 c) L<sub>90</sub>    d) L<sub>dn</sub>
- 5) Atomic absorption spectroscopy is used to detect \_\_\_\_\_.  
 a) Heavy metals                                      b) Particle size  
 c) Dissolved gases                                  d) Dissolved organic compounds
- 6) Minamata disease causes due to the over exposure of  
 a) Inorganic mercury                              b) Phenyl mercury  
 c) Compound mercury                              d) Methyl mercury
- 7) The people working in \_\_\_\_\_ are more susceptible to Black lung disease.  
 a) Organic solvent industry                      b) Coal mine  
 c) Electroplating industry                        d) Paint industry
- 8) The maximum permissible limit of Nitrate (NO<sub>3</sub>) in drinking water set by BIS is  
 a) 65 mg/l    b) 45 mg/l  
 c) 55 mg/l    d) 50 mg/l
- 9) Maximum moisture content required in composting is  
 a) 65%    b) 50%  
 c) 40%    d) 30%
- 10) The ionizing radiation mainly affects on \_\_\_\_\_.  
 a) Cell membrane                                  b) DNA  
 c) Mitochondria                                      d) Ribosome
- 11) The \_\_\_\_\_ radioactive isotopes are formed by nuclear fission.  
 a) Cr<sup>51</sup>, Cu<sup>64</sup>                                        b) Zr<sup>95</sup>, Mn<sup>54</sup>  
 c) Sr<sup>90</sup>, I<sup>131</sup>                                        d) All of the above

12) Ocean can provide an abundant supply of \_\_\_\_\_ as nuclear fuel.

- a) Thorium
- b) Deuterium
- c) Tritium
- d) Plutonium

13) 'Love canal' dump site is related to the waste of

- a) Chemical waste
- b) Municipal waste
- c) Nuclear waste
- d) Hospital waste

14) \_\_\_\_\_ is commonly released from landfills.

- a) CO
- b) CH<sub>4</sub>
- c) H<sub>2</sub>S
- d) CO<sub>2</sub>

**Q.2** What are the air pollutants? Write a note on its sources and effects. **14**

**Q.3** Write detailed account on Noise pollution including sources and effects. **14**

**Q.4** Discuss the Solid waste pollution problems and remedial measures with suitable case study. **14**

**Q.5** **Write a short note on the following:** **14**

- A)** Physicochemical parameters for water quality assessment and its significance.
- B)** Soil pollution from mining activities.

**Q.6** **Write a brief with suitable illustration on the following:** **14**

- A)** Solid Waste classification
- B)** Nuclear waste and its impacts

**Q.7** **Write an account on the following:** **14**

- A)** Elaborate the Eutrophication process and its problem in India.
- B)** Marine pollution and its impact on marine life.

Seat No.	
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**M.Sc. (Semester - III) (New) (CBCS) Examination Mar/Apr-2018**  
**Environmental Science**  
**ENVIRONMENTAL BIOTECHNOLOGY**

Time : 2½ Hour

Max. Marks: 70

**Instructions:** 1) Answer any Five Question.

2) All Questions carry equal marks.

3) Question No. 1 is Compulsory.

4) Attempt any two questions from Q.No.2, 3 and 4.

5) Attempt any two short notes from Q.No.5, 6 and 7.

6) Draw neat and labeled diagrams wherever necessary.

**Q.1 Select the answer among the following****14**

- 1) Transgenic means \_\_\_\_\_
  - a) Of the third generation
  - b) New variety
  - c) Incorporation of new DNA into germ line
  - d) None of the above
- 2) Cryopreservation using liquid nitrogen is done at \_\_\_\_\_
  - a) -2°C
  - b) -10°C
  - c) -900°C
  - d) -190°C
- 3) Microbes can be used in \_\_\_\_\_
  - a) Dye removal
  - b) BOD removal
  - c) Biogas generation
  - d) All of the above
- 4) First cloned animals is
  - a) Dog
  - b) Mule
  - c) Sheep
  - d) Cat
- 5) The extra chromosomal DNA is called as \_\_\_\_\_.
  - a) Clone
  - b) Plasmid
  - c) Gene
  - d) None of these
- 6) Which of the following bacteria is called superbug which could clean the oil?
  - a) *Bacillus subtilis*
  - b) *Pseudomonas putida*
  - c) *Pseudomonas denitrificans*
  - d) *Bacillus denitrificans*
- 7) Which of the following is not present in the bacteria?
  - a) RNA
  - b) Cell wall
  - c) Flagella
  - d) Mitochondria
- 8) Bacteria used in biogas generation are \_\_\_\_\_.
  - a) Halogens
  - b) Methanogens
  - a) Cyanobacteria
  - b) *Vibrio cholerae*
- 9) The removal of Nitrate from waste water helps to prevent \_\_\_\_\_.
  - a) Biomagnifications
  - b) Atrophication
  - c) Eutrophication
  - d) None of the above

- 10) "Xenobiotics" are \_\_\_\_\_
- Any chemicals that contain carbon
  - Products used for the biological control of pests
  - Special soil amendments favored in organic farming
  - Synthetic organic compounds not found in nature
- 11) \_\_\_\_\_ is an example of fungal biopesticides.
- Trichoderma sp.
  - B. Thuringiensis
  - E.coli
  - None of these
- 12) \_\_\_\_\_ is a nitrogen fixing bacteria with leguminous plants.
- Azolla
  - Anabaena
  - Rhizobium
  - None of these
- 13) Halophytes plants grow in \_\_\_\_\_
- Red soil
  - Black soil
  - Yellow soil
  - Saline soil
- 14) Following is one of the process in bioremediation \_\_\_\_\_
- Bioventing
  - Rhizofiltration
  - Biosparging
  - All of the above

- Q.2** Give a short account of scope of environment biotechnology with suitable examples. **14**
- Q.3** Explain in detail the role of biological filtration process. Also, give an account on biotrickling and bioscrubbers. **14**
- Q.4** Elaborate the difference in between Prokaryotic cell and Eukaryotic cell with suitable diagram. **14**
- Q.5 Write note on:** **14**
- Bioremediation of soil
  - Microbial growth and substrate utilization kinetics
- Q.6 Explain in brief:** **14**
- Microbial pesticide
  - Insect as biocontrol
- Q.7 Write an account on:** **14**
- Applications of genetically modified microorganisms
  - Role of microorganisms in wastewater treatment

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**M.Sc. (Semester - III) (New) (CBCS) Examination Mar/Apr-2018**  
**Environmental Science**  
**ENVIRONMENTAL STATISTICS**

Time : 2½ Hour

Max. Marks: 70

- Instructions:** 1) Answer any Five Question.  
 2) All Questions carry equal marks.  
 3) Question No. 1 is Compulsory.  
 4) Attempt any two questions from Q.No.2, 3 and 4.  
 5) Attempt any two questions from Q.No.5, 6 and 7.  
 6) Draw neat and labeled diagrams wherever necessary.  
 7) Scientific calculator is allowed for calculations.

**Q.1 Select the answer among the following****14**

- 1) The statistical measures such as average deviation, standard deviation and mean are classified as part of
  - a) Deciles system
  - b) Moment system
  - c) Percentile system
  - d) Quartile system
- 2) \_\_\_\_\_ is collected by the investigator himself for the purpose of a specific inquiry or study.
  - a) Secondary data
  - b) Primary data
  - c) Statistical data
  - d) Published data
- 3) What type of data do you need for a chi-square test?
  - a) Ordinal
  - b) Categorical
  - c) Interval
  - d) Scales
- 4) The median of a series of numerical values is :
  - a) Equal to the average
  - b) A graph or hart
  - c) A number
  - d) A frequency table
- 5) The variance of 15 observations is 4. If each observation is increased by 9, the variance of resulting observation is
  - a) 2
  - b) 3
  - c) 4
  - d) 5
- 6) The specific statistical methods that can be used to summarize or describe a collection of data is called :
  - a) Descriptive statistics
  - b) Inferential statistics
  - c) Analytical statistics
  - d) All of the above
- 7) 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
- 8) The coefficient of correlation is computed to be -0.95 means that \_\_\_\_\_.
  - a) The relationship between two variables is weak
  - b) The relationship between two variables is strong and positive
  - c) The relationship between two variables is strong and but negative
  - d) Correlation coefficient cannot have this value

- 9) Which of the following values could not represent a correlation coefficient?
- $r = 0.99$
  - $r = 1.09$
  - $r = -0.73$
  - $r = -1.0$
- 10) The standard deviation of 5,5,5,5,5,5 will be \_\_\_\_\_
- 1
  - 0
  - 5
  - None of these
- 11) If  $H_0$  is true and we reject it is called:
- Type-I error
  - Type-II error
  - Standard error
  - Sampling error
- 12) The correlation between two variables is called as \_\_\_\_\_.
- Multiple correlation
  - Partial correlation
  - Simple correlation
  - Total correlation
- 13) Student's t-statistic is applicable in case of:
- Equal number of samples
  - Unequal number of samples
  - Small samples
  - All of the above
- 14) Which method of analysis does not classify variables as dependent or independent?
- Regression analysis
  - Discriminant analysis
  - Analysis of variance
  - Cluster analysis

**Q.2 Answer the following.**

- What are various measures of central tendency? Discuss their merits and demerits. 14
- Calculate the geometric mean for the data related to the internode length (cm) of a rice variety?

Internode Length (cm)	0-10	10-20	20-30	30-40	40-50	50-60
Number of plants	10	16	22	32	26	20

**Q.3 Answer the following**14

- Explain multiplication rule of probability? What is the probability of the heads on two or three successive tosses?
- What is mean deviation? Calculate mean deviation and coefficient of mean deviation from the following data

<b>X</b>	10	11	12	13	14	15	16
<b>Y</b>	3	8	12	14	7	6	4

**Q.4 Answer the following.**14

- Data on waxy endospermic plants were recorded in maize. Calculate standard deviation for from the following data.

<b>Waxy endospermic plants</b>	7	8	9	10	11	12
<b>Number of plants</b>	13	13	18	17	15	14

- What is null hypothesis? Discuss type I and II error in testing of hypothesis.

**Q.5 Write a short notes on following:**14

- Scatter diagram method for studying correlation
- Basic concepts of experimental design

**Q.6 Write in brief on the following.**

**14**

- a) What is meant by regression? Add a note on regression analysis and its applications.
- b) What is the importance of various statistical techniques in environmental sciences?

**Q.7 Write an account on the following**

**14**

- a) What is principle component analysis? Discuss its importance in environmental studies.
- b) What is cluster analysis? Add a note on different types of clusters.

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**M.Sc. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018**  
**Environmental Science**  
**ENVIRONMENTAL POLICY, ACTS, LAWS AND ENVIRONMENTAL**  
**MANAGEMENT SYSTEM**

Time: 2½ Hours

Max Marks: 70

- Instructions:** 1) Attempt any five questions.  
 2) All Questions carry equal marks.  
 3) Question no.1 is compulsory.  
 4) Attempt any two questions from Q.NO.2, 3 and 4.  
 5) Attempt any two questions from Q.No.5, 6 and 7.

**Q.1 Fill in the blanks using correct choice:-****14**

- 1) Provision of giving compensation to local people is included \_\_\_\_\_ law.
  - a) The Water (prevention and control of pollution) Act, 1974.
  - b) The Forest (Conservation) Act, 1980.
  - c) Public Liability Insurance Act, 1991
  - d) The Factories Act 1948
- 2) GIS stand for \_\_\_\_\_.
  - a) General Information Service
  - b) Geographical Information System
  - c) Geographical Intensive System
  - d) Geographical Intensive Scheme
- 3) The Wildlife (Protection) Act was enacted in the year \_\_\_\_\_.
  - a) 1986
  - b) 1974
  - c) 1994
  - d) 1972
- 4) The functions of Central Board are given under \_\_\_\_\_.
  - a) Section 16
  - b) Section 19
  - c) Section 25
  - d) Section 24
- 5) The provisions of environmental protection in the constitution were made under \_\_\_\_\_.
  - a) Article 5-A
  - b) Article 21-B
  - c) Article 27 – B (h)
  - d) Article 48-A and Article 51-A (g)
- 6) WHO head quarter is located at \_\_\_\_\_.
  - a) Geneva
  - b) Washington
  - c) New-York
  - d) Copenhagen
- 7) Ministry of Environment and Forest was established in \_\_\_\_\_.
  - a) 1980
  - b) 1985
  - c) 1972
  - d) 1988
- 8) UNCED Conference was held in \_\_\_\_\_.
  - a) Stockholm
  - b) Geneva
  - c) London
  - d) Washington



- 9) The world as World Environmental day is celebrated on \_\_\_\_\_.
- December 1
  - June 5
  - November 14
  - August 15
- 10) EMS Stands for \_\_\_\_\_.
- Environmental Management System
  - Environmental Monitoring Science
  - Educational Monitoring System
  - Environmental Measurement Science
- 11) The Air (Pollution Prevention and Control) Act was amended in \_\_\_\_\_.
- 1981
  - 1982
  - 1986
  - 1985
- 12) Red data book is published by \_\_\_\_\_.
- IUCN
  - WWF
  - BNHS
  - WHO
- 13) UNCED stands for \_\_\_\_\_.
- United Nations Conference on Environment and Development
  - United Nations Convention on Environment and Development
  - United Nations Conference on Energy and Development
  - United National Conference on Environment and Development
- 14) The first of the major environmental protection act to be promulgated in India was \_\_\_\_\_.
- Water Act
  - Air Act
  - Environmental Act
  - Noise Pollution Rule
- Q.2** Explain in details environment (Protection) Act, 1986. 14
- Q.3** What is IUCN? Explain its functions and red data book in detail. 14
- Q.4** Discuss the forest policy of India in details. 14
- Q.5** **Write a short note on the following:** 14  
**A)** World Wild life fund for nature  
**B)** Application of Remote Sensing
- Q.6** **Give a brief account of :-** 14  
**A)** Environmental ethics  
**B)** CRZ
- Q.7** **Write short notes on:-** 14  
**A)** Comment on Water Policy of India  
**B)** Water (Prevention and Control of Pollution) Act. 1974

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**M.Sc. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018**  
**Environmental Science**  
**ENVIRONMENTAL TOXICOLOGY AND SAFETY**

Time: 2½ Hours

Max Marks: 70

- Instructions:** 1) Attempt any five questions.  
 2) All Questions carry equal marks.  
 3) Question no.1 is compulsory.  
 4) Attempt any two questions from Q.No.2, 3 and 4.  
 5) Attempt any two questions from Q.No.5, 6 and 7.  
 6) Draw neat and labeled diagram wherever necessary.

**Q.1 Solve correct answer among the following:-****14**

- 1) What is toxicology? (Indicate the one best answer).
  - a) The field that studies the adverse effects on humans and animals.
  - b) The field that studies the adverse effects of chemicals on living organisms.
  - c) The field that studies the adverse effects of chemicals and micro organisms.
  - d) The field that studies the risk-benefit balance of chemicals for living organisms.
- 2) \_\_\_\_\_ is widely regarded as “the Father of Toxicology”.
  - a) EF Knipling
  - b) Zeidler
  - c) Paracelsus
  - d) Goldsmith and Frank
- 3) Dermal dose is given through the \_\_\_\_\_.
  - a) Mouth
  - b) Inhalation route
  - c) Skin
  - d) None of these
- 4) Carrier of Dengue disease is \_\_\_\_\_.
  - a) Aedes Mosquito
  - b) Housefly
  - c) Culex Mosquito
  - d) Anopheles Mosquito
- 5) Which is called powerhouse of the cell?
  - a) Lysosome
  - b) Golgi Bodies
  - c) Ribosomes
  - d) Mitochondria
- 6) Acute lethal effects can be classified into parts;
  - a) 3
  - b) 5
  - c) 2
  - d) 4
- 7) The effect of cigarette smoking and radon in combination on lungs is:
  - a) Its reaction with other organic moiety
  - b) Chemical species present in atmosphere
  - c) Its absorption by biota
  - d) None of the above
- 8) When an ant bites a person, which irritating chemical it (ant) injects into his (person) body?
  - a) Acetic acid
  - b) Tartaric acid
  - c) Citric acid
  - d) Formic acid

- 9) DDT is considered as a:  
 a) Persistent pollutant  
 b) Antibiotic  
 c) Biodegradable pollutant  
 d) All of these
- 10) Cd, Pb and Hg are nephrotoxic metals as they can harm \_\_\_\_\_ of humans.  
 a) Lungs  
 b) Liver  
 c) Kidney  
 d) Neurons
- 11) The biochemical laboratory of human body is:  
 a) Stomach  
 b) Intestine  
 c) Liver  
 d) Kidney
- 12) Asbestos use is banned in many countries, it is known to cause?  
 a) Cardiac disease  
 b) Urinary disease  
 c) Lung cancer  
 d) Cataract
- 13) The disciplines which studies the effect of chemicals on entire ecosystem, is referred as:  
 a) Ecotoxicology  
 b) Behavioral ecology  
 c) Immune toxicology  
 d) None of these
- 14) Tobacco addiction is caused due to:  
 a) Cocaine  
 b) Nicotine  
 c) Caffeine  
 d) Histamine

- Q.2** What do you mean by toxicology? Discuss the scope and basic divisions of toxicology? **14**
- Q.3** Discuss different routes of toxicants and give in detail the toxic responses of Gastrointestinal (GI) system? **14**
- Q.4** Discuss general principles and need for safety? Write in brief occupational injuries and industrial accidents. **14**
- Q.5 Write a short note on the following** **14**  
 a) Evaluation of toxicity  
 b) Spermatogenesis
- Q.6 Write In Brief on the following:** **14**  
 a) Detoxification of toxicants in resistant biota  
 b) Environmental stress
- Q.7 Write an account on the following:-** **14**  
 a) Safety standards and codes  
 b) Personal protective equipments

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**M.Sc. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018  
Environmental Science**

**ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL AUDIT**

Time: 2½ Hours

Max Marks: 70

- Instructions:** 1) Attempt any five questions.  
 2) All Questions carry equal marks.  
 3) Question no.1 is compulsory.  
 4) Attempt any two questions from Q.No.2, 3 and 4.  
 5) Attempt any two questions from Q.No.5, 6 and 7.  
 6) Draw neat and labeled diagram wherever necessary.

**Q.1 Solve correct answer among the following:-**

**14**

- 1) The projects of which of the following are being assessed for Environmental Impact Assessment study?
  - a) Irrigation and Power
  - b) Administration
  - c) Public investment
  - d) All of these
- 2) Which is not an objective of EIA?
  - a) Recycling and reduction of waste
  - b) Risk analysis and disaster management
  - c) Assessment and international funding
  - d) All of the above
- 3) The areas up to the 100 meters around the premises such as hospitals, educational institutions and courts are
  - a) Silence Zones
  - b) Atrophic Zones
  - c) EMP Zones
  - d) Irrigation Zones
- 4) Environmental auditing helps in pollution control, improves production, safety and health and conservation of natural resources by way of:
  - a) ensuring waste prevention and reduction
  - b) assessing compliance with regulatory environment
  - c) placing environmental information to the public
  - d) All of the above
- 5) Which is not correctly matched?
  - a) ISO – International Organization of Standards
  - b) EMS – Environmental Management System
  - c) EIA – Environmental Impact Assessment
  - d) WTO – Whole Trade Output
- 6) The agency which is not certifying the ISO is
  - a) Bureau of Indian Standards (BIS), Delhi
  - b) Quality Assurance Services (QAS)
  - c) Central Pollution Control Board (CPCB), Delhi
  - d) All Indian Inset of Local Self Government, Mumbai
- 7) The false statement regarding the environmental impact assessment is:
  - a) Schedule I – Lists of projects
  - b) Schedule II – Application forms
  - c) Schedule III – Details of EAC
  - d) All of the above

- 8) The important step/s in the predication of impacts is/are:
  - a) Carrying out the evaluation of impacts
  - b) Study of EIA
  - c) Preparation of environmental management plan
  - d) All of the above
- 9) The environmental planning is
  - a) The analysis of how we can prevent the poaching of environment
  - b) The analysis of how people impact natural resources
  - c) The analysis of how we can preserve our biodiversity
  - d) The supply of management tool to conserve our environment
- 10) The correct pair regarding the air quality monitoring technique is
 

a) O <sub>2</sub> – Ultraviolet Photometry	b) SO <sub>2</sub> – Diffusion Tube
c) NO <sub>2</sub> – Infrared absorption	d) C, N, P – Polyurethane filter
- 11) An environmental audit helps in achieving the
 

a) resource optimization	b) waste minimization
c) public awareness	d) all of these
- 12) Ministry of Environment and Forests amended the Environmental Impact Assessment notification public hearing mandatory for environmental clearance on
 

a) April 10; 1997	b) January 27; 1996
c) January 27; 1997	d) April 03; 1998
- 13) The impacts caused by construction of dams and reservoirs include
 

a) Soil erosion	b) Loss of vegetation cover
c) Changes in microclimate	d) All of the above
- 14) All major project plans should be examined to ensure
 

a) Quality of environment	b) Public health and safety
c) Both of these	d) None of these

- |            |   |           |
|------------|---|-----------|
| <b>Q.2</b> | Define and briefly discuss EIA outlining and its importance in development projects.  | <b>14</b> |
| <b>Q.3</b> | Write in details on environmental impacts from an irrigation project.                 | <b>14</b> |
| <b>Q.4</b> | Discuss the importance of ISO 14001 in brief.   | <b>14</b> |
| <b>Q.5</b> | <b>Write a short note on the following</b>  | <b>14</b> |
|            | a) Role of public participation in EIA  |           |
|            | b) Environmental Management System (EMS)  |           |
| <b>Q.6</b> | <b>Write a brief with suitable illustration on the following</b>                      | <b>14</b> |
|            | a) State the scope and applicability of Environmental Audit in developmental process. |           |
|            | b) Write in brief about EIA processes in mining project.                              |           |
| <b>Q.7</b> | <b>Write an account on the following:-</b>  | <b>14</b> |
|            | a) Components of EIA  |           |
|            | b) NABET  |           |