



SLR-FP – 275

Seat No.	
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**M.Sc. I (Semester – I) Examination, 2015
ENVIRONMENTAL SCIENCE**

Paper – III : Environmental Statistics and Computer Applications (New)

Day and Date : Monday, 20-4-2015
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 :

1) VIRUS stands for

- A) Very Important Resource Under Search
- B) Virtual Information Resource Under Seize
- C) Verify Interchange Result Until Source
- D) Very Important Record User Searched

2) The brain of any computer system is

- A) ALU
- B) Memory
- C) CPU
- D) Control unit

3) Which of the following are the functions of operating system ?

- A) Allocates resources
- B) Monitors activities
- C) Manages disks and files
- D) All of the above

4) The CPU and memory are located on the

- A) Expansion board
- B) Motherboard
- C) Storage device
- D) Output device

P.T.O.



- 5) The specific statistical methods that can be used to summarize or to describe a collection of data is called
- A) Descriptive statistics B) Inferential statistics
C) Analytical statistics D) All of the above
- 6) _____ is one which 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
- 7) The mode of a frequency distribution can be determined graphically by
- A) Histogram B) Frequency curve
C) Frequency polygon D) Polygon
- 8) Standard error of the sampling distribution of a statistic t is
- A) Standard deviation B) Median
C) Variance D) Mean
- 9) _____ is a process of information.
- A) Books B) CD-ROM
C) Computers D) None of the above
- 10) Information is
- A) Raw Data B) Processed Data
C) Input Data D) Organized Data
- 11) A statement about a population developed for the purpose of testing is called
- A) Hypothesis B) Hypothesis testing
C) Level of significance D) Test-statistic
- 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) Power of a test is related to
- A) Type – I error B) Type – II error
C) Both (A) and (B) D) Neither (A) and (B)
- 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 mean, median and mode of the following data : 14

Temperature in °C	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 35	35 – 40
Number of days	1	10	20	8	6	3	1

3. Calculate coefficient of standard deviation from the following data : 14

Rainfall in cm	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Number of days	3	4	8	10	13	2

4. Answer the following : 14

- A) What is the significance of regression analysis in environmental science ?
- B) Discuss the concept of probability with suitable example.

5. Write short notes on the following : 14

- A) Concept of skewness and kurtosis and their type.
- B) Hypothesis testing.

6. Write in brief on the following : 14

- A) Computer applications in environmental science.
- B) Types of printers with merits and demerits.

7. Write an account on the following : 14

- A) Input and Output devices of computer.
 - B) Types of memory and advances.
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M.Sc. – I (Semester – I) Examination, 2015
ENVIRONMENTAL SCIENCE (New)
Introduction to Geoscience (Paper – IV)

Day and Date : Wednesday, 22-4-2015
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 70

- 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) Which of the following green house gases is not found in nature ?
 - a) Nitrous oxide
 - b) Methane
 - c) Halocarbons
 - d) Carbon dioxide
- 2) What causes maximum damage to the ozone layer ?
 - a) Deforestation
 - b) Supersonic aircraft and rockets
 - c) Volcano eruption
 - d) None
- 3) SPM stands for
 - a) Suspended Particulate Matter
 - b) Standard Particles Material
 - c) Suspended Particles Material
 - d) Standard Particulate Matter
- 4) The name of the layer of the Earth that separate the crust from the core is
 - a) Magma
 - b) Asthenosphere
 - c) Lithosphere
 - d) Mantle

P.T.O.



- 5) Which of the following rock type could be the parent of metamorphic rocks ?
- a) Igneous
 - b) Metamorphic
 - c) Sedimentary
 - d) All the above
- 6) Which of the following statements about the Moho is false ?
- a) Seismic wave speed up as they pass across the Moho heading downward
 - b) The Moho separate denser rocks from less denser rocks above
 - c) The Moho separate the crust from the mantle
 - d) The Moho marks the top of a partially molten layer
- 7) Biotite is the member of _____ group of rock forming minerals.
- a) Olivine
 - b) Feldspar
 - c) Mica
 - d) Amphibole
- 8) Basalt rock is classified as basic-igneous rock because it contains _____
- a) Silica content more than 66%
 - b) Silica content between 52-66%
 - c) Silica content between 45-52%
 - d) Silica content less than 45%
- 9) A _____ is a sedimentary rock with large grain size and angular fragments.
- a) Conglomerate
 - b) Sandstone
 - c) Breccia
 - d) Shale
- 10) Which of the following element constitute the major composition of atmosphere ?
- a) Oxygen
 - b) Carbon dioxide
 - b) Nitrogen
 - d) Hydrogen
- 11) Which of the following mineral is stable on the earth surface ?
- a) Olivine
 - b) Quartz
 - c) Pyroxene
 - d) Mica
- 12) Factors important in soil formation process
- a) Nature of the rock
 - b) Physical environment
 - c) Climate
 - d) All of the above
- 13) Which of the following is not a water pollutant ?
- a) Chlorofluorocarbons
 - b) Oil
 - c) Mercury
 - d) None
- 14) Which of the following is a volcanic rock ?
- a) Granite
 - b) Basalt
 - c) Gabbro
 - d) Pegmatite



- II. Describe briefly the structure of the Atmosphere around the Earth ? Explain its significance. **14**
- III. What are igneous rock ? Describe the classification of igneous rock. **14**
- IV. What is meant by pollution ? Explain in brief types of pollution. **14**
- V. Write notes on : **14**
- a) Internal structure of the Earth.
 - b) Soil profile.
- VI. Explain in brief : **14**
- a) Geo-strophic wind and gradient wind.
 - b) Ozone layer.
- VII. Describe the following : **14**
- a) Silicate structure.
 - b) Origin and composition of sea water.
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- 6) _____ classification forms the basis of Protected Areas Network in India.
- a) Biotic
 - b) Biogeographic
 - c) Ecological
 - d) Biological
- 7) The Government of India enacted Wildlife (Protection) Act in the year _____ for the protection of wildlife in the country.
- a) 1973
 - b) 1974
 - c) 1972
 - d) 2002
- 8) _____ is a biological phenomenon by which an organism produces one or more biochemicals that influence the growth, survival and reproduction of other organisms.
- a) Succession
 - b) Invasion
 - c) Dominance
 - d) Allelopathy
- 9) Mega diversity regions in India include _____ and Western Ghats.
- a) Central Himalaya
 - b) Eastern Ghats
 - c) Eastern Himalayas
 - d) Deccan Peninsula
- 10) _____ is defined as the number of species and abundance of each species that live in a particular location.
- a) Species diversity
 - b) Dominance
 - c) Species richness
 - d) Biodiversity
- 11) _____ is the association of a biological taxon with a unique and well-defined geographic area.
- a) Commensalism
 - b) Endemism
 - c) Invasion
 - d) Mutualism
- 12) _____ is the natural environment in which an organism lives, or the physical environment that surrounds a species.
- a) Niche
 - b) Ecosystem
 - c) Habitat
 - d) National Park
- 13) A _____ is a biogeographic region with a significant reservoir of biodiversity that is under threat from humans.
- a) Wildlife Sanctuary
 - b) Wildlife Habitat
 - c) Wildlife Corridor
 - d) Biodiversity Hotspot
- 14) A _____ species is a plant or animal that plays a unique and crucial role in the way an ecosystem functions.
- a) Keystone
 - b) Endemic
 - c) Dominant
 - d) Indigenous



2. Define biodiversity, its types and measuring of biodiversity. **14**
 3. What are the mega biodiversity centers and discuss the various reasons for biodiversity being rich in tropics with suitable examples. **14**
 4. Write an account of various traditional biodiversity conservation practices in India by citing appropriate examples. **14**
 5. Write short notes on : **14**
 - a) Factors deciding the degree of biodiversity
 - b) RAMSAR sites in India and their importance.
 6. Give a brief account of **14**
 - a) Impact of exotic species
 - b) Protected Area Network in India.
 7. Write a note on : **14**
 - a) Habitat fragmentation
 - b) Keystone species.
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M.Sc. – I (Semester– II) Examination, 2015
ENVIRONMENTAL SCIENCE (New)
Paper – VI : Analytical Techniques and Instrumentation

Day and Date : Saturday, 18-4-2015

Total Marks: 70

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

- 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, 4**.
5) Answer **any two** short note questions from **5, 6, 7**.
6) Draw neat and labeled diagrams **wherever** necessary.

1. Fill in the blanks with appropriate answers : **14**
- 1) In pH meter a single electrode has a reference internal solution of _____
a) KCl b) HgCl c) HCL d) NaCl
 - 2) Conductivity is a _____
a) Reciprocal of resistance b) Proportional to resistance
c) Equivalent to resistance d) Half of resistance
 - 3) Total Solids (TS) is a measure of _____
a) TSS and TDS b) TSS, TDS and VSS
c) Only TDS d) All of the above
 - 4) HVS is used for _____
a) Groundwater sampling b) Water sampling
c) Particulate matter d) Volatile solids
 - 5) Wet scrubber can remove fumes of
a) HCl b) HF c) Radium d) Uranium
 - 6) As per standard the general temperature of a primary chamber of an incinerator is _____
a) 300°C b) 500°C c) 700°C d) < 800°C

P.T.O.



- 7) In Turbidimetry and Nephelometry absorbance of light is dependent on _____
- a) Number of particles b) Shape of particle
c) Velocity of particle d) Form of particle
- 8) In Turbidimetry and Nephelometry if sample and solution are colorless then wavelength should be in _____
- a) Infrared range b) Visible range
c) Ultraviolet range d) None of the above
- 9) Spectrophotometer is employed to measure the _____
- a) Amount of light absorbed b) Amount of light scattered
c) Amount of light diffracted d) None of the above
- 10) In spectrophotometer a blank solution is of _____
- a) Distilled water
b) Does not contain solute that absorbs light
c) Identical
d) All of the above
- 11) UV/V spectrophotometer analysis is useful as _____
- a) Qualitative determination of analytes
b) Quantitative determination of analytes
c) Accurate analytes
d) None of the above
- 12) _____ energy is required to excite the atom in flame photometer.
- a) Thermal b) Electrical c) Nuclear d) None of the above
- 13) Nebulizer in flame photometer is the opening for _____
- a) Fuel b) Sample solution
c) Oxidant gas d) None of the above
- 14) Nuclear Magnetic Resonance (NMR) technique is used for
- a) Heavy metal analysis b) Isobar elemental analysis
c) Isotopic element analysis d) Halogen analysis



2. Describe in detail theory, principle and application of Atomic Absorption Spectrophotometer. **14**

 3. Explain the principle and working of high performance liquid chromatography. Give block diagram of the apparatus. **14**

 4. Explain in detail Electrophoresis. Explain types of electrophoresis and their applications.

 5. Write short note :
 - a) X-ray fluorescence **14**
 - b) NMR.

 6. Write a note on :
 - a) Techniques of air sampling **14**
 - b) Principle of Gas Chromatography.

 7. Write a brief account on :
 - a) Gravimetric methods **14**
 - b) SEM.
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**M.Sc. I (Semester – II) Examination, 2015
ENVIRONMENTAL SCIENCE (New)
Paper – VII : Water and Waste Water Engineering**

Day and Date : Tuesday, 21-4-2015

Total Marks : 70

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

- 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** short note questions from **5, 6, 7**.
6) Draw **neat** and labeled diagrams **wherever** necessary.

1. Fill in the blanks.

14

- 1) Rapid gravity filter used for _____
 - a) Dissolve Organic matter
 - b) Dissolved solids
 - c) Dissolve gases
 - d) Bacteria and colloid solids
- 2) Chlorine demand of water is equal to _____
 - a) applied chlorine
 - b) residual chlorine
 - c) sum of residual chlorine
 - d) difference of applied and residual chlorine
- 3) _____ chemical used for dechlorination.
 - a) Carbon dioxide
 - b) Bleaching powder
 - c) Sulphur oxide
 - d) Chloramines
- 4) Standard BOD measures at _____
 - a) 20 C
 - b) 25 C
 - c) 30 C
 - d) 35 C
- 5) The ratio of 5 day BOD to ultimate BOD is _____
 - a) 1/3
 - b) 2/3
 - c) 3/4
 - d) 1.0



- 6) Dissolve oxygen in streams water is _____
 - a) max. at noon
 - b) min. at noon
 - c) max. at midnight
 - d) same throughout the day
- 7) Corrosion in concrete sewer is caused by _____
 - a) Septic condition
 - b) DO
 - c) Chlorine
 - d) Nitrogen
- 8) Detention period of grit chamber is _____
 - a) 1 min
 - b) 5 min
 - c) 2-4 hours
 - d) 12 hours
- 9) _____ retards the self purification of the streams.
 - a) High Temp.
 - b) Sunlight
 - c) Oxygen Demand
 - d) None of the above
- 10) Eutrophication of water means _____
 - a) Accumulation of plant nutrients in water bodies
 - b) Accumulation of metals in water bodies
 - c) Accumulation of pesticides in water bodies
 - d) Accumulation of gases in water bodies
- 11) The adsorption capacity of activated carbon is measured by _____
 - a) Freundlich isotherm
 - b) Langmuir isotherm
 - c) BET isotherm
 - d) All of the above
- 12) Residual chlorine is determined by _____
 - a) Starch method
 - b) Orthodine method
 - c) Both a and b
 - d) None of the above
- 13) The velocity of sedimentation tank is about _____
 - a) 5-10 cm/sec
 - b) 15-30 cm/sec
 - c) 5-10 cm/min
 - d) 5-10 cm/hr
- 14) On standard silica scale the turbidity in drinking water should be limited to
 - a) 10 ppm
 - b) 20 ppm
 - c) 30 ppm
 - d) 50 ppm



2. Explain in brief the designing aspects of RBC. **14**
 3. What are the demerits of open land filling process in solid waste management practices ? **14**
 4. What are the types of bioremediation ? Add a note on bioleaching of heavy metals. **14**
 5. Give the illustration of : **14**
 - A) Grit Chamber
 - B) Oxidation pond
 6. Write principle and application of : **14**
 - A) PACT
 - B) Open Hearth Incinerators
 7. Write the significance and methods of : **14**
 - A) Dewatering of sludge
 - B) Conditioning of sludge.
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**M.Sc. I (Semester – II) Examination, 2015
ENVIRONMENTAL SCIENCE (New)
Paper – VII : Water and Waste Water Engineering**

Day and Date : Tuesday, 21-4-2015

Total Marks : 70

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

- 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** short note questions from **5, 6, 7**.
6) Draw **neat** and labeled diagrams **wherever** necessary.

1. Fill in the blanks.

14

- 1) Rapid gravity filter used for _____
 - a) Dissolve Organic matter
 - b) Dissolved solids
 - c) Dissolve gases
 - d) Bacteria and colloid solids
- 2) Chlorine demand of water is equal to _____
 - a) applied chlorine
 - b) residual chlorine
 - c) sum of residual chlorine
 - d) difference of applied and residual chlorine
- 3) _____ chemical used for dechlorination.
 - a) Carbon dioxide
 - b) Bleaching powder
 - c) Sulphur oxide
 - d) Chloramines
- 4) Standard BOD measures at _____
 - a) 20 C
 - b) 25 C
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 - d) 35 C
- 5) The ratio of 5 day BOD to ultimate BOD is _____
 - a) 1/3
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- 6) Dissolve oxygen in streams water is _____
- a) max. at noon b) min. at noon
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- 7) Corrosion in concrete sewer is caused by _____
- a) Septic condition b) DO
c) Chlorine d) Nitrogen
- 8) Detention period of grit chamber is _____
- a) 1 min b) 5 min c) 2-4 hours d) 12 hours
- 9) _____ retards the self purification of the streams.
- a) High Temp. b) Sunlight
c) Oxygen Demand d) None of the above
- 10) Eutrophication of water means _____
- a) Accumulation of plant nutrients in water bodies
b) Accumulation of metals in water bodies
c) Accumulation of pesticides in water bodies
d) Accumulation of gases in water bodies
- 11) The adsorption capacity of activated carbon is measured by _____
- a) Freundlich isotherm b) Langmuir isotherm
c) BET isotherm d) All of the above
- 12) Residual chlorine is determined by _____
- a) Starch method b) Orthodine method
c) Both a and b d) None of the above
- 13) The velocity of sedimentation tank is about _____
- a) 5-10 cm/sec b) 15-30 cm/sec
c) 5-10 cm/min d) 5-10 cm/hr
- 14) On standard silica scale the turbidity in drinking water should be limited to
- a) 10 ppm b) 20 ppm c) 30 ppm d) 50 ppm



2. Explain in brief the designing aspects of RBC. **14**
 3. What are the demerits of open land filling process in solid waste management practices ? **14**
 4. What are the types of bioremediation ? Add a note on bioleaching of heavy metals. **14**
 5. Give the illustration of : **14**
 - A) Grit Chamber
 - B) Oxidation pond
 6. Write principle and application of : **14**
 - A) PACT
 - B) Open Hearth Incinerators
 7. Write the significance and methods of : **14**
 - A) Dewatering of sludge
 - B) Conditioning of sludge.
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M.Sc. I (Semester – II) Examination, 2015
Environmental Science
REMOTE SENSING AND GIS IN ENVIRONMENTAL SCIENCE (New)
(Paper – VIII)

Day and Date : Thursday, 23-4-2015
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** 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. Select correct answer among the following : **(14)**
- 1) Using the latitude and longitude system (degrees, minutes and seconds), 20 minutes is equal to
a) 1/3 hour b) 0.20° c) 1/20° d) 1/3°
 - 2) Precise measurement of Earth features can be obtained from
a) Vertical aerial photographs b) Low-oblique photographs
c) High-oblique photographs d) Oblique aerial photographs
 - 3) _____ color appear as on false-color IR images for living vegetation.
a) Green b) Red c) Blue d) Yellow
 - 4) The terrain features which provides attributes, shape, size and texture of objects, is called
a) Spectral variation b) Central variation
c) Temporal variation d) Spatial variation
 - 5) Full form for GPS is
a) Global Positioning Science b) Global Positioning Satellite
c) Global Positioning Sensor d) Global Positioning System

P.T.O.



- 6) Among the following is not sensor
a) LANDSAT b) LISS IV c) LISS-X d) LISS III
- 7) Geographic information systems
a) Emphasize the use of the map as a means of information storage
b) Limited to military and homeland defense applications
c) Only display information from government data
d) Prepares data from any sources to display combination of statistical variables
- 8) _____ is a kind of map which shows a specific spatial distribution or category of data.
a) Reference map b) Thematic map
c) Location map d) General-purpose map
- 9) Lines of constant latitude are _____ while lines of constant longitude are
a) Verticals, horizontals b) Meridians, axes
c) Parallels, meridians d) Date lines, meridians
- 10) GIS is a modern tool with remarkable capabilities _____ is a true statement about GIS.
a) GIS stands for 'Geological Information System'
b) GIS links maps and databases and is useful mainly for spatial analysis
c) GIS is also known as digital cartography
d) GIS requires remotely sensed information
- 11) Full form for SAR is _____
a) Synthetic aperture radar b) Synthetic aviation radar
c) Systematic aperture radar d) Systematic aviation radar
- 12) _____ is directly related with mathematical study of shapes and spaces.
a) Remotely sensed images b) Topology
c) GIS and vector d) Raster Data Model



- 13) Select correct alternative which is not associated with platform
- a) Ground based
 - b) Air borne
 - c) Space born
 - d) Water born
- 14) The distance between each degree of latitude is approximately
- a) 65 km
 - b) 100 km
 - c) 111 km
 - d) 360 km
2. What are the components of remote sensing ? Also discuss the applications of remote sensing in environmental sciences ? **14**
3. What is electromagnetic radiation ? Discuss in detail on its various categories and use in remote sensing studies. **14**
4. Write an account on various image interpretation techniques used in RS and GIS. Also explain various elements of resolution. **14**
5. Write short notes on the following : **14**
- a) Various types of sensors.
 - b) Supervised classification and its importance in environment studies.
6. Write in brief on the following : **14**
- a) Methods of spatial reference systems.
 - b) Vector and raster data base structure.
7. Write in brief on the following : **14**
- a) Geographical information systems and its helpful in creating digital maps.
 - b) Platforms used in remote sensing.
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Seat No.	
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M.Sc. – II (Semester – IV) Examination, 2015
ENVIRONMENTAL SCIENCE (Paper – XIII)
Disaster Management and Environmental Technology

Day and Date : Thursday, 16-4-2015

Max. Marks : 70

Time : 3.00 p.m. to 6.00 p.m.

- Instructions:**
- 1) Attempt **any five** questions.
 - 2) **All** questions carry **equal** marks.
 - 3) Question No. **1** is **compulsory**.
 - 4) Answer **any two** questions from **each** Section.
 - 5) Draw neat and labelled diagrams **wherever** necessary.

I. Fill in the blank with appropriate word.

14

- 1) _____ is the example of manmade disaster.
a) Nuclear disaster b) Earthquake
c) Volcano d) Tsunami
- 2) _____ is the example of non renewable energy resource.
a) Fossil Fuel b) Tidal energy
c) Geothermal energy d) Solar energy
- 3) Bhopal gas tragedy is concerned with
a) Nitrous oxide b) MIC
c) Sulphur dioxide d) Chlorofluorocarbon
- 4) The greatest amount of heat energy on the surface of the earth comes from
a) gravitational attraction of the earth and the moon
b) tidal energy
c) movement of the earth
d) the sun



- 5) A drought is defined as _____
a) a desert region of low rainfall
b) a time of abnormally low rainfall
c) a famine condition
d) a lack of water
- 6) Mudflows and debris avalanches during and after hurricanes usually result from _____
a) storm surges
b) heavy rains
c) high winds
d) tidal waves
- 7) The earth's human population is estimate around at _____ people.
a) 070 million b) 4.6 billion c) 7 billion d) 10 billion
- 8) Powerful tsunami is most frequently produced by _____
a) volcanoes
b) underwater landslide
c) earthquakes
d) impact of asteroids
- 9) Most of the earthquakes, volcanoes and mountain belts of the earth occurs
a) within tectonic plates far from their edges _____
b) in ocean basins
c) at the edges of tectonic plates _____
d) at zones where tettonic plates slide horizontally post each other
- 10) The Kyoto protocol was adopted in
a) Japan b) USA c) Germany d) Iceland
- 11) Ozone layer is present in the
a) troposphere b) mesosphere c) thermosphere d) stratosphere
- 12) Infectious hospital waste is segregated in _____ colour bags.
a) Red
b) Green
c) Blue
d) None of the above
- 13) Solar energy is the primary force in creation of
a) precipitation
b) wind
c) atmospheric circulation
d) all of the above
- 14) Which of the following type of coal contain over 90% carbon and is smokeless _____
a) Peat b) Lignite c) Bituminous d) Anthracite



SECTION – I

- II. What is the difference between Hazard and disaster ? Explain causes and consequences of Earthquake in detail. **14**
- III. Discuss, “Energy use pattern in rural and urban areas. **14**
- IV. Describe the onsite and offsite disaster management. Add a note on importance of people as the first responders in disaster management. **14**

SECTION – II

- V. Write short notes on : **14**
 - a) Bhopal gas tragedy
 - b) Solar energy
 - VI. Briefly discuss on : **14**
 - a) Role of IREDA
 - b) Acid rain
 - VII. Give a brief account on : **14**
 - a) Biomass energy
 - b) Oil spills.
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SLR-FP-294

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M.Sc. II (Semester – IV) Examination, 2015
ENVIRONMENTAL SCIENCE (Paper – XIV)
Environmental Policy, Act and Planning

Day and Date : Saturday, 18-4-2015

Max. Marks : 70

Time : 3.00 p.m. to 6.00 p.m.

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

1. Fill in the blanks.

- 1) Environment clearance of developmental projects are given by
 - a) SPCB
 - b) CPCB
 - c) Union Ministry of Environment and Forestry
 - d) Concerned States Impact Assessment Agency
- 2) Any person aggrieved by an order made by the SPCB under Section 25, 26 or 27 can appeal to
 - a) S C
 - b) H C
 - c) Appellate Authority
 - d) C P C B
- 3) The notice to polluting industry under Section 49 of the Water (Prevention and Control of Pollution) Act, 1974 is given for
 - a) 30 days
 - b) 45 days
 - c) 15 days
 - d) 60 days
- 4) Among the following which project will require clearance from central Government ?
 - a) Food Processing Industry
 - b) Plastic Moulding Unit
 - c) Garment Industry
 - d) Synthetic Rubber Industry

P.T.O.



- 13) In India endangered animals are listed in _____
- a) Environment (Protection) Act, 1986
 - b) Indian Forest Act (Revised) 1982
 - c) Forest Conservation Act, 1980
 - d) Wildlife (Protection) Act, 1972
- 14) The procedures and safeguards for handling of hazardous substances are mentioned in which Act ?
- a) The Air Act, 1981
 - b) The Environment Act, 1986
 - c) The Factories Act, 1948
 - d) The Water Act, 1974
2. Give a short account of the Earth Summit 1992, highlighting the major global issues.
3. Discuss Environmental Impact Assessment in India.
4. Explain in detail concept of Environmental Education in India.
5. Write note on.
- 1) Stockholm Conference
 - 2) Environment (Protection) Act, 1986
6. Explain in brief.
- 1) Environmental Protection Articles in Indian Constitution.
 - 2) Rio Summit (1992).
7. Write an account on.
- 1) Environmental Planning.
 - 2) Kyoto protocol.
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Seat No.	
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M.Sc. II (Semester – IV) Examination, 2015
ENVIRONMENTAL SCIENCE (Paper – XV)
Watershed Management

Day and Date : Tuesday, 21-4-2015
Time : 3.00 p.m. to 6.00 p.m.

Max. Marks : 70

- N.B. :** a) Answer **any five** questions.
b) **All** questions carry **equal** marks.
c) Question **one (1)** is **compulsory**.
d) Answer **any two** essay questions from **2, 3, 4**.
e) Answer **any two** short notes questions from **5, 6, 7**.
f) Draw **neat** labelled diagrams **wherever** necessary.

1. Choose correct alternative for the following :

14

- 1) In the irregular terrain underground water basin is artificially recharged by
 - a) Basin method
 - b) Ditch method
 - c) Flooding method
 - d) Water spreading
- 2) Which type of water exists an continuous film around the soil particles ?
 - a) Gravitational
 - b) Capillary
 - c) Pellicular
 - d) Hygroscopic
- 3) Water that is safe for drinking is
 - a) Potable water
 - b) Mineral water
 - c) Soft water
 - d) Hard water
- 4) The sphere of living matter combining water soil and air on the surface of the earth is called
 - a) Hydrosphere
 - b) Lithosphere
 - c) Atmosphere
 - d) Biosphere
- 5) Cook's method is most suitable for watersheds up to about _____ for soil conservation.
 - a) 50 ha
 - b) 100 ha
 - c) 200 ha
 - d) 400 ha

P.T.O.



- 6) Loss of productivity of soil is referred to
- a) Reduction
 - b) Bio-magnification
 - c) Desertification
 - d) Cos-generation
- 7) The objective of watershed management programmes are
- a) Increase infiltration
 - b) Control damaging excess runoff
 - c) Manage and utilize runoff
 - d) All the above
- 8) Turkey's Nest Tank is used to store
- a) Water above and below ground level
 - b) Water above ground level
 - c) Both a and b
 - d) Only a is correct
- 9) A gabin is a _____ shaped cage.
- a) Circular
 - b) Rectangular
 - c) Triangular
 - d) Semi-circular
- 10) Wurli is a kind of _____ trench ridge for gentle slope.
- a) Deep
 - b) Shallow
 - c) Both a and b
 - d) None of the above
- 11) The sub-surface water is stored in
- a) aquifer
 - b) lake
 - c) dam
 - d) none
- 12) Primary objective of agro forestry is
- a) Minimum production of biomass
 - b) Maximum production of biomass per unit area
 - c) Maximum production of biomass per unit area in time
 - d) All the above
- 13) Galley development takes place by
- a) Downward scour
 - b) Upstream movement
 - c) Downward scour-upstream movement heading and stabilization
 - d) Both a and b
- 14) Drainage density is calculated by
- a) Total length of all stream \div catchment area
 - b) Stream length of lower order stream \div catchment area
 - c) Both the above
 - d) None of the above



2. What is water conservation ? Write peoples priorities in the watershed management.
 3. What do you mean by soil reclamation ? Write need and types of soil reclamation in watershed management.
 4. Explain the classification and types of agro forestry systems with suitable examples.
 5. Write in short : **14**
 - a) Parameters of watershed
 - b) Need of water harvesting.
 6. Explain in brief :
 - a) Contour trenches
 - b) Strip, mixed and Intercropping.
 7. Write a short note on :
 - a) Base flow
 - b) Types of watershed.
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