

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q. 1 Answer all the questions:**a. Answer one out of two-**

(07)

- i. Define Biodiversity. Discuss the different way to conservation of Biodiversity.
- ii. Give the detail account of models for population growth.

b. Answer one out of two-

(04)

- i. Explain the Nitrogen cycle.
- ii. Discuss the various factor affecting Biodiversity.

c. Answer any three out of five-

(03)

- i. Define Biomes.
- ii. Write full form of IUCN.
- iii. What is commensalism.
- iv. Define *ex-situ* conservation.
- v. Root nodule of legume plant is site forfixation.

Q. 2. Answer all the questions:**a. Answer one out of two-**

(07)

- i. Explain the methods of Bioremediation with suitable example.
- ii. Give the detail account of biodegradation of hydrocarbon.

b. Answer one out of two-

(04)

- i. Write short notes on xenobiotics.
- ii. Describe the reason for acid rain.

c. Answer any three out of five-

(03)

- i. Mention one example of air pollutant.
- ii. Define Biomagnification.
- iii. Give an example of oil spill bacteria.
- iv. Which compounds are likely to involve in acid rain.
- v. Define intrinsic Bioremediation.

Q. 3 Answer all the questions:**a. Answer one out of two-**

(07)

- i. Explain any seven important properties of water.
- ii. Define Biofertilizer. Explain the mechanism of Nitrogen fixation in detail.

b. Answer one out of two-

(04)

- i. Write short notes on Bioleaching.
- ii. Explain any one method for treatment of solid waste.

c. Answer any three out of five-

(03)

- i. Write the name of any one method for secondary treatment of waste water.
- ii. Give one example of free living nitrogen fixation bacteria.
- iii. What plant is the main source of azadirachtin used in biocontrol.
- iv. The process of extracting metal from rock by using microbes called.....
- v. Write use of BOD.

Q. 4 Answer all the questions:

a. Answer one out of two-

(07)

- i. Discuss types and methods of processing of Data.
- ii. Define frequency distribution? Write various steps to construct a frequency distribution for grouped data.

b. Answer one out of two-

(04)

- i. Write four important application of Biostatistics in modern Biology?
- ii. Write short notes on coefficient of variance.

c. Answer any three out of five-

(03)

- i. Standard deviation is square root of.....
- ii. Define sampling.
- iii. Define geometric mean.
- iv. Write down the formula for calculation of mean for continuous series.
- v. Define measure of dispersion.

Q. 5 Answer all the questions:

a. Answer one out of two-

(07)

- i. What do you mean by Student's t-test ? Discuss its application in Biology with one example?
- ii. Explain in detail about Binomial and Poisson distribution and its properties.

b. Answer one out of two-

(04)

- i. Write short notes on Chi-square test.
- ii. Discuss the application of ANOVA in Biology.

c. Answer any three out of five-

(03)

- i. A process by which we estimate the value of dependent variable on the basis of one or more independent variable is called.....
- ii. Define statistical hypothesis.
- iii. Correlation coefficient is number betweenand.....
- iv. Which of the test is used for testing relationship exists on the categorical variables in the population.
- v. Write full form of ANOVA.
