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**RAH-003-1014014** Seat No. _____

# B. Sc. (Sem. IV) (CBCS) (W.I.F. 2016) Examination

**March / April – 2019**

## BT - 401 : Environmental Biotechnology & Biostatistics

**Faculty Code : 003**

**Subject Code : 1014014**

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

**1** (a) Objective : **4**

(1) Many individuals of the same species living together in a defined area form a _____.

(2) The association of Tapeworm and Ringworm with human is known as _____.

(3) "Red Data Book" give information about species which are _____.

(4) Give examples of symbiotic and non-symbiotic bacterial species, which fixed atmospheric nitrogen.

(b) Answer in brief : (any **one** out of two) **2**

(1) What is Tundra Biome ?

(2) Define : Biodiversity.

(c) Answer in detail : (any **one** out of two) **3**

(1) Explain characteristics of population.

(2) Explain in brief Positive interaction among species.

(d) Write a note on (any **one** out of two) **5**

(1) Describe Nitrogen cycle.

(2) Short note on conservation of Biodiversity.

**2** (a) Objective : **4**

(1) Chlorinated hydrocarbon pesticide such as DDT are usually not magnified in food chain. True/False ?

(2) Acid rain is produced by excess _____ and _____ from burning fossils fuel.

(3) The first microorganism, used to remove oil spills from sea.

(4) Define : Biodegradation.

(b) Answer in brief : (any **one** out of two) **2**

(1) Define bioremediation with one example.

(2) Biomagnification.

(c) Answer in detail : (any **one** out of two) **3**

(1) Write down about Recalcitrant xenobiotics compound.

(2) Explain Acid mine drainage.

(d) Write a note on : (any **one** out of two) **5**

(1) Enlist Air pollutants and write down their effects.

(2) Reaction involved in biodegradation of nitrobenzene.

**3** (a) Objective : **4**

(1) The extraction of metal from ore using microbes is called _____.

(2) Give normal value of BOD in drinking water.

(3) Give names of nitrogen fixing bacteria useful in preparation of biofertilizer.

(4) Which gas is generally produce during composting ?

(b) Answer in brief : (any **one** out of two) **2**

(1) Define biological control with example.

(2) Explain the process of disinfection of drinking water.

(c) Answer in detail : (any **one** out of two) **3**

(1) Explain the biological method used for metal extraction from ore.

(2) Give chemical and biological properties of water.

(d) Write a note on : (any **one** out of two) **5**

(1) Short note on Bioplastic.

(2) Give secondary treatment process of waste water.

**4** (a) Objective : **4**

(1) Find out Mode : 2,4,2,5,4,6,8,5,4,4,9,6

(2) Who is father of Biostatistics ?

(3) Define : Variance.

(4) What symbol is used to represent mean ?

(b) Answer in brief : (any **one** out of two) **2**

(1) Explain merits and demerits of Median.

(2) Give four applications of biostatistics.

(c) Answer in detail : (any **one** out of two) **3**

(1) Explain in brief frequency distribution.

(2) The monthly bill of five people at grocer's shop are as follow, find out standard deviation.
2500, 3200, 4200, 5000, 5500

(d) Write a note on : (any **one** out of two) **5**

(1) Explain collection, processing and presentation of data.

(2) Give difference between arithmetic, harmonic and geometric mean. Explain with example.

**5** (a) Objective : **4**

(1) Full form of ANOVA.

(2) Correlation coefficient is denoted by _____.

(3) Which parametric test is used to analyze, Mendel's monohybrid cross ?

(4) Define positive Skewness.

(b) Answer in brief : (any **one** out of two) **2**

(1) What do you understand by Kurtosis ?

(2) Give difference between binomial distribution and normal distribution.

(c) Answer in detail : (any **one** out of two) **3**

(1) Explain Linear regression analysis.

(2) Give applications of Student's t-test.

(d) Write a note on : (any **one** out of two) **5**

(1) Overview of Analysis of variance.

(2) What is chi square test ? State its applications in biology.

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