



M 7751

Reg. No. :

Name :

I Semester B.Sc. Degree (CCSS-Supple./Improv.)

Examination, November 2014

(2012 and 13 Admn.)

CORE COURSE IN BOTANY/GENERAL COURSE IN PLANT SCIENCE

1B01 BOT/1A14 PLS : Methodology and Perspectives of Sciences

Time : 3 Hours

Max. Weightage : 30

SECTION - A

Answer **all** questions. Questions in a bunch of **four**. **Each** bunch carries a weightage of **1**.

1. Choose the correct answer.

i) Scientific theory should be

a) Disproved

b) Falsifiable

c) Based not on evidence

d) Incompatible with evidences

ii) A hypothesis should be

a) illogical

b) non consistent

c) offer explanation of phenomenon under explanation

d) contradictory

iii) Sequence of logical deduction

a) Error

b) Bias

c) Proof

d) Simulation

iv) Phenomenon under study in an experiment is called

a) Dependent variable

b) Sample

c) Control

d) Variable

2. State **true** or **false** :

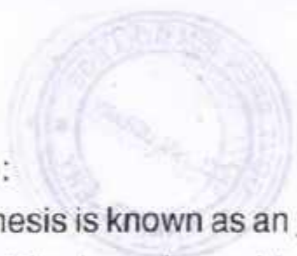
i) Practical knowledge is gained through experience.

ii) To evaluate a variable all other variables must be kept constant.

iii) Perfect accuracy is possible in all situation.

iv) Inductive reasoning applies general principles to predict specific results.

P.T.O.



3. Fill in the blanks :

- Test of hypothesis is known as an _____
- Logical proposition based on evidences are _____
- Title of column in a table is called _____
- Representative of a whole population is known as _____

4. Rearrange columns **B** and **C** to column **A**.

A	B	C
i) Karl Popper	Genetics	Theories of physics, biology, astronomy
ii) Gregor Mendel	Philosopher of science	Law of motion
iii) Isacc Newton	Greek philosopher	Pseudo science theory
iv) Aristotle	Physics	Law of heredity

5. Answer in **one** word or in **one** sentence :

- Null hypothesis
- Scientific temper
- Inference
- Plagarism.

(5×1=5)

SECTION – B

Answer **any four**. Differentiate the following. **Each** question carries a weightage of 1.

- Proof and falsification
- Hypothetico-deductive reasoning and inductive reasoning
- Accuracy and precision
- Population and sample
- Error and bias
- Auxiliary hypothesis and adhoc hypothesis.

(4×1=4)

SECTION – C

Answer **any five**. Short answer questions. **Each** question carries a weightage of 1.

- How can you formulate a hypothesis ?
- Write about scientific laws and factual truths.



- "Scientific research is complete only when it is presented before scientific community" Explain.
- What is empiricism ?
- Science can be considered as human activity – explain.
- Write about direct and indirect observations.
- What is ANOVA ?

(5×1=5)

SECTION – D

Answer **any six**. Short answer questions. **Each** question carries a weightage of 2.

- What do you know about peer review ?
- Write about sharing of knowledge and scientific information.
- Give an account on vocabulary of science.
- Explain measures of central tendency.
- Give an account on molecular foundations in biology.
- Explain standard deviation and standard error.
- Write about theories and laws in science.
- Write a note on importance of statistics in biology.

(6×2=12)

SECTION – E

Answer **any one**. **Essay** type questions. **Each** question carries a weightage of 4.

- With an example to illustrate how an experiment can be designed.
- What is data presentation ? Explain two methods of data presentation with diagrams.
- What is bioethics ? Write about necessity and paradigms of bioethics.

(1×4=4)