

**FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

Genetics

GEN 1B 01—METHODOLOGY AND PERSPECTIVES OF SCIENCE

(2019—2020 Admissions)

Time : Two Hours

Maximum : 60 Marks

Part A

Answer Short Questions.

2 marks each.

1. Explain pie chart.
2. What are scientific theories and laws ?
3. Define peer review.
4. Explain auxiliary hypothesis.
5. Define scientific temper.
6. What is Serendipity ?
7. Define Simulation.
8. What are scientific journals ? Give two examples.
9. Define applied science. Mention its importance ?
10. Explain instrumental error.
11. Mention the structure of a table.
12. Define Variable.

(Ceiling 20 marks)

Turn over

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Part B

Answer Paragraph Questions.

5 marks each.

13. Compare Type 1 and type 2 errors with suitable examples.
14. Comment on primary and secondary sources of scientific information.
15. Describe the importance of scientific publications ?
16. Briefly describe the significance of standard deviation and correlation.
17. Differentiate between inductive and deductive method.
18. Describe about digital sources of scientific information.
19. Briefly explain about non patentable inventions.

(Ceiling 30 marks)

Part C

Answer Essay Question.

10 marks each.

20. Write an essay on the importance of instrumentation in science.
21. What is Observation ? Describe the different types of observations in research.

(Ceiling 10 marks)

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Section A (Short Questions)*Answer at least **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. Define variable.
2. What is virtual testing ?
3. Define robotics.
4. Differentiate between corroboration and falsification.
5. What is meant by hypothesis testing ? Give an example.
6. What is skepticism in science ?
7. What is plagiarism ?
8. Structure of graph.
9. Explain type I error.
10. Explain standard deviation.
11. Define instrumental error.
12. Differentiate between randomization and replication.

(8 × 3 = 24 marks)

Section B (Paragraph Questions)*Answer at least **five** questions.**Each question carries 5 marks.**All questions can be attended.**Overall Ceiling 25.*

13. Write a brief note on necessity of units and dimensions.
14. Explain the test of significance.

Turn over

15. Explain publication of data.
16. Write briefly on primary and secondary sources of scientific information.
17. Differentiate between human and machine observation.
18. Differentiate between controlled and uncontrolled observation.
19. Briefly explain the steps involved in designing of an experiment.

(5 × 5 = 25 marks)

Section C

*Answer any **one** question.
The question carries 11 marks.*

20. Describe the importance of ethics in science.
21. Explain the various types of tables. Comment on the significance and structure of tables in data presentation.

(1 × 11 = 11 marks)