(6 pages)

Reg. No. : _____

Code No. : 20204 E **Sub. Code : SMBO 62**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Botany — Core

GENETICS, EVOLUTION AND BIOSTATISTICS

(For those who joined in July 2017–2019 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. A cross of F1 individual with recessive parent is called as
   (a) Monohybrid cross
   (b) Dihybrid cross
   (c) Back cross
   (d) Test cross

2. According to mendel's law the character expressed in F1 generation are
   (a) Dominant
   (b) Recessive
   (c) (a) and (b)
   (d) Incomplete dominance

3. Coupling and Repulsion is associated with
   (a) Linkage
   (b) Crossing over
   (c) Mutation
   (d) Complementary gene

4. Which one of the following formula is represented by Hardy Weinberg law
   (a) $p+q=0$ (b) $p+q=3$
   (c) $p+q=4$ (d) $p+q=1$

5. DNA does not have
   (a) Thymine (b) Adenine
   (c) Guanine (d) Uracil

6. Operon concept was put forwarded by
   (a) Devries
   (b) Mendel
   (c) Griffith
   (d) Jacob and monad

7. Use and disuse theory was proposed by
   (a) Hugo de vries (b) Lamarck
   (c) Darwin (d) Mendel

8. Mutation theory was proposed by
   (a) Darwin (b) Lamarck
   (c) Mendel (d) Hugo de vries

9. Mode is
   (a) The least frequent value
   (b) The highest frequent value
   (c) Average
   (d) The central value

10. The median of 2, 3, 4, 5, 6, 7, 8 is
    (a) 4 (b) 5
    (c) 6 (d) 3

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write short notes on Test cross.

Or

(b) What is complementary gene? Describe.

12. (a) Explain coupling and repulsion with suitable example.

Or

(b) What are the ways by which sex is determined in plants? Explain any one type.

13. (a) Describe the molecular structure of DNA.

Or

(b) Write notes on DNA replication.

14. (a) Explain use and disuse theory with suitable example.

Or

(b) Write short notes on mutation theory.

15. (a) Write short notes on Arithmetic mean.

Or

(b) Discuss the chi-square test.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain polygeneic inheritance with suitable example.

Or

(b) Explain mendel's Dihybrid cross.

17. (a) Write an essay on crossing over.

Or

(b) Explain male sterility in marize.

18. (a) Give an account on characterization of Genetic code.

Or

(b) Discuss DNA as the genetic material.

19. (a) What is speciation? Describe the types of speciation.

Or

(b) Write an essay on natural selection theory.

20. (a) Write an essay on collection and interpretation of data in Biostatistics.

Or

(b) Write an essay on standard deviation.

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