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(NEP-2020)

(1st Semester)

BOTANY/ZOOLOGY/BIOTECHNOLOGY

(Multi-disciplinary Course)

(**Fundamentals of Biology**)

(Revised)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(**SECTION : A—OBJECTIVE**)

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Who among the following is regarded as the 'Father of Biology'?

(a) Louis Pasteur ()

(b) Robert Koch ()

(c) Girolamo Fracastoro ()

(d) Aristotle ()

2. In Galen's proposal, the veins contain
- (a) water ()
 - (b) blood ()
 - (c) fats ()
 - (d) proteins ()
3. Who classified the plant and animal kingdoms?
- (a) Robert Koch ()
 - (b) Charles Darwin ()
 - (c) Aristotle ()
 - (d) Girolamo Fracastoro ()
4. Who discovered the 'cell'?
- (a) Robert Koch ()
 - (b) Robert Hooke ()
 - (c) Antonie van Leeuwenhoek ()
 - (d) Louis Pasteur ()
5. Who proposed the law of dominance?
- (a) Frederick Griffith ()
 - (b) Charles Darwin ()
 - (c) Gregor Mendel ()
 - (d) Oswald Avery ()
6. Which of the following is the genetic material?
- (a) DNA ()
 - (b) RNA ()
 - (c) Both (a) and (b) ()
 - (d) None of the above ()

7. Cell is the basic unit of ____.

(a) nucleus ()

(b) cell wall ()

(c) life ()

(d) protein ()

8. 'Prontosil' belongs to ____ group.

(a) Formamide ()

(b) Acetamide ()

(c) Sulfonamide ()

(d) Benzamide ()

9. Which of the following is the first cloned animal?

(a) Polly sheep ()

(b) Dolly sheep ()

(c) Molly sheep ()

(d) Goat ()

10. Which of the following is an ethical issue concerning human cloning?

(a) Abortions ()

(b) Stillbirths ()

(c) Developmental abnormalities ()

(d) All of the above ()

(SECTION : B—SHORT ANSWERS)

(Marks : 25)

Answer *five* of the following questions, taking at least *one* from each Unit :

5×5=25

UNIT—I

1. Write a brief note on Koch's Postulates.
2. What is natural selection?
3. Write a note on contributions of William Harvey to physiology.

UNIT—II

4. What is the difference between plant and animal cells?
5. Draw the Eukaryotic cell.
6. Write the differences between Prokaryotic and Eukaryotic cell.

UNIT—III

7. Write a note on the helical structure of DNA.
8. What are antibiotics?
9. Write the uses of Salvarsan.

(SECTION : C—DESCRIPTIVE)

(Marks : 40)

Answer *four* of the following questions, taking at least *one* from each Unit :

10×4=40

UNIT—I

1. Discuss the contributions of Girolamo Fracastoro, Louis Pasteur and Robert Koch to the Germ theory of diseases. 10
2. Write a detailed note on Aristotle's classification of living entities. 10
3. Discuss the various theories of evolution. 10

UNIT—II

4. Write notes on the following : 10
- (a) Law of segregation
 - (b) Law of independent assortment
 - (c) Law of dominance
5. Elaborate on the contributions of Robert Hooke and Antonie van Leeuwenhoek to biology. 10
6. What is cell theory? Discuss the key point of cell theory in detail. 10

UNIT—III

7. What is a clone? Discuss how the 'first animal' was cloned. 2+8=10
8. Write notes on the following : 5+5=10
- (a) Human Genome Project
 - (b) Ethical issues of human cloning
9. Write about the discovery of antibiotics. Discuss the uses of prontosil, penicillin, and streptomycin. 10

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