



Roll No. _____ (To be filled in by candidate)

Paper Code

4

4

6

1

Sessions: 2015-2017 & 2016-2018

Biology (Objective Type)

Rwp-12-18

Time: 20 Minutes

Marks: 17

NOTE: Write answers to the questions on the objective answer sheet provided. Four possible answers

A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or pen ink on the answer sheet provided.

1.1. A dilute solution compared to cell concentration is termed as:

- (A) Hypertonic (B) Hypotonic (C) Isotonic (D) Paratonic

2. Number of NH_3 molecules required to produce one molecule of urea is:

- (A) 1 (B) 2 (C) 3 (D) 4

3. The bone which provides attachment site for muscles is:

- (A) Compact bone (B) Spongy bone (C) Cartilage (D) Hip bone

4. Which one is not a joint disease?

- (A) Arthritis (B) Sciatica (C) disc slip (D) Spondylosis

5. Vehicle for transport of male gamete in land plants is:

- (A) Water (B) Pollen tube (C) Pollen grain (D) Wind

6. Reproduction is necessary for the survival of:

- (A) Individual (B) Species (C) Population (D) Community

7. Apoptosis is:

- (A) Division of cells (B) Death of cells by tissue damage
(C) Suicide of cells (D) Weakness of cells

8. Cell cycle involves:

- (A) growth of cell (B) replication of DNA
(C) Cell division (D) growth of cell, replication of DNA and cell division

9. Resting membrane potential of a neuron is:

- (A) -50mV (B) -60mV (C) -70mV (D) -80mV

10. Optimum temperature for growth of plants is:

- (A) 30--40°C (B) 25--30°C (C) 10--20°C (D) 5--10°C

11. Particular array of chromosomes that an individual possesses is called:

- (A) Holotype (B) Karyotype (C) Neotype (D) Paratype

12. All the genes found in a breeding population constitute:

- (A) genotype (B) Genome (C) Gene frequency (D) Gene pool

13. Primer for PCR contains about:

- (A) 05 bases (B) 10--20 bases (C) 30 bases (D) 40 bases

14. Archaeobacteria can tolerate temperature:

- (A) 45°C (B) 85°C (C) 100°C (D) 120°C

15. Biome is a large:

- (A) Simple community (B) Complex community (C) Regional community (D) Climax community

16. Desert ecosystem of Mianwali and Bhakkar is called:

- (A) Thal (B) Thar (C) Cholistan (D) Sahara

17. Treasure of all type of resources is:

- (A) Weather (B) Climate (C) Environment (D) Water

Roll No. _____ (to be filled in by the candidate)

Sessions: 2015-2017 & 2016-2018

Biology (Essay Type)

Rwp-12-18

Section - I

Marks: 68

Time: 2:40 Hours

2x8=16

2. Write short answers of any eight parts from the following.

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|--|--|
| i. What is blubber and in which animals is it found? | ii. Differentiate between osmoregulation and thermoregulation. |
| iii. What is Pyrexia? | iv. How does digitigrade differ from unguligrade? |
| v. What is ball and socket joint? | vi. Define remodeling. |
| vii. Give two examples of short day plant. | viii. Write cause and symptoms of syphilis. |
| ix. Give types of organisms present in profundal zone. | x. Name different zones of fresh water lakes. |
| xi. What is fossil fuel? | xii. Define demography. |

2x8=16

3. Write short answers of any eight parts from the following.

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|--|--|
| i. What is reflex action? | ii. Differentiate between thermoreceptors and nociceptors. |
| iii. Define succession and give one example | iv. Differentiate between genotype and phenotype. |
| v. What is a test cross? Who devised it? | vi. Differentiate between co-dominance and over-dominance. |
| vii. What are restriction enzymes? Who first isolated them? | viii. What are transgenic bacteria? |
| ix. What is gene therapy? How cancer cells are killed by gene therapy? | |
| x. Differentiate between biosphere and Niche. | |
| xi. What are abiotic components of an ecosystem? Give examples. | |
| xii. Differentiate between action membrane potential and resting membrane potential. | |

2x6=12

4. Write short answers of any six parts from the following.

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|--|---|
| i. Write down the role of temperature as an external factor in plant growth. | |
| ii. What role is played by clear cytoplasm and yellow cytoplasm in animal development? | |
| iii. How many chromosomes are found in sugarcane and mouse? | |
| iv. Define translation. | v. What is the difference between R, and S, type of bacteria? |
| vi. What are the events of S-Phase? | vii. Write down the events of metaphase of mitosis. |
| viii. How does genetic drift effect the gene frequency? | ix. Write the names of four extinct species of animals in Pakistan. |

Section - II**NOTE: Answer any three questions from the following.**

8x3=24

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|---|---|
| 5. (a) Describe food web in detail. Also draw the diagram. | 4 |
| (b) Describe the process of concentration of excretory products in human nephron. | 4 |
| 6. (a) Discuss deformities of skeleton due to genetic and hormonal causes. | 4 |
| (b) Describe Frederick Griffith's experiment. | 4 |
| 7. (a) What are receptors? Describe its type. | 4 |
| (b) Describe importance of forests. | 4 |
| 8. (a) Write a note on sexually transmitted disease. | 4 |
| (b) Define and discuss Test Cross. | 4 |
| 9. (a) Describe role of nucleus in development. | 4 |
| (b) Describe non-random mating and selection as factors affecting gene frequency. | 4 |