

MODEL PAPER
PHD ADMISSION TEST
Department of Microbiology
Quaid-i-Azam University, Islamabad

Total Marks: 100

Time Allowed: 1 Hr 30 Minutes

Name: _____

Date: _____

Roll No: _____

The paper will have three parts with marks and section distribution as below.

Part 1. English (grammar) (10 marks). Total number of questions will be 10, each question will have 1 mark

Part 2: Analytical logical (general) (20 marks). Total number of questions will be 20, each question will have 1 mark

Part 3. Subject based MCQs (70 marks). Total number of questions will be 70, each question will have 1 mark.

Note: The subject based questions will be selected from all fields of microbiology.

Part 1 ENGLISH (GRAMMAR) (10 Marks)

Synonyms: For each question encircle a matching word in meaning from the given options

1. Xenobiotic

- a. Foreign to living beings
- b. Sinkable
- c. Unmanageable in the environment
- d. Brackish

2. Synoptic

- a. Summary
- b. Symbiotic
- c. Tentative
- d. Tacit

Analogy: Choose the lettered pair of words whose relationship is Most Like the relationship expressed in the original linked pair.

3. Dwell: Denizen

- a. Shun: Outcast
- b. Inherit: Heir
- c. Squander: Miser
- d. Obey: Autocrat

4. Mendicant: Impecunious

- a. Critic: Quizzical
- b. Complainer: Petulant
- c. Physician: Noble
- d. Liar: Compulsive

Encircle any one of the suitable options from the following for each highlighted (italicized underlined) word in the sentence

5. He opened the letter without *caring* to read the address on envelop.
- a. Thinking
 - b. Bothering
 - c. Worrying
 - d. Knowing

Part 2: ANALYTICAL LOGICAL (GENERAL) (20 Marks)

Read the following passages and then encircle the best answer choice for each question

○ (Questions 6-8 are based on the following passage)

Seven students –F, G, H, I, J, K, and L are being considered for a University fellowship. In evaluating these students, the Dean has received from the registrar’s office their official transcripts including their cumulative grade points averages (GPAs). In analyzing this information, the Dean made the following observations:

- None of the students has the same GPA as any other student
- K’s GPA is higher than L’s, but lower than H’s.
- I has a higher GPA than J.
- Both F and G have higher GPAs than H

6. Each of the following would be true EXCEPT

- a. F has the highest GPA
- b. G has the highest GPA
- c. More than 3 students have higher GPAs than K
- d. More than 3 students have lower GPAs than K

7. Which of the following, if true, would be sufficient to determine who has the lowest GPA?

- a. I has the highest GPA
- b. I has a lower GPA than K
- c. K has a higher GPA than J
- d. J has highest GPA than K

8. If H as a higher GPA than I, which of the following CANNOT be true

- a. I's GPA is equal to the average of F's and G's
- b. I's GPA s equal to the average of K's and L's
- c. J's GPA is equal to the average of K's and L's
- d. J has the second lowest GPA

○ (Questions 9-12 are based on this passage)

Observe the dilemma of the fungus: it is plant like, but it possesses no chlorophyll. While all other plants put the sun's energy to work for them combining the nutrients of ground and air into the body structure, the chlorophyllless fungus must look elsewhere for an energy supply. It finds it in those other plants which having received their energy free from sun; relinquish it at some point in their cycle either to animals or to fungi. In this search for energy the fungus has become the earth's major source of rot and decay. Wherever, you see mold forming on a piece of bread, or a pile of leaves turning it in to compost, or a blown-down tree becoming pulp on the ground, you are watching a fungus eating. Without fungus action the earth would be piled high with the dead plant life of past centuries. In fact, certain plants which contain resins that are toxic to fungi will last indefinitely; specimens of the redwood, for instance, can still be found resting on the forest floor centuries after having been blown down.

9. Which of the following words best describes the fungus as depicted in the passage?

- a. Unevolved
- b. Sporadic
- c. Enigmatic
- d. Parasitic

10. The passage states all the following about fungi EXCEPT:

- a. They are responsible for the decomposition of much plant life
- b. They cannot live completely apart from other plants
- c. They are vastly different from other plants
- d. They are poisonous to resin-producing plants

11. The author's statement that "you are watching a fungus eating" is best described as

- a. Figurative
- b. Ironical
- c. Parenthetical
- d. Erroneous

12. The author is primarily concerned with

- a. Warning people of the dangers of fungi
- b. Relating how most plants use solar energy
- c. Describing the actions of fungi
- d. Explaining the long life of some redwoods

PART 3. SUBJECT BASED MCQS (70 MARKS)

(For each question encircle the right option from the following)

13. Group of RNA used for regulation of genes are called:

- a. polycistronic
- b. cluster of mRNA
- c. hmRNA
- d. siRNA

14. Scanning microscopy is a technique to visualize:

- a. Surface topology
- b. Subcellular structure
- c. Live culture
- d. Motility of bacteria

15. Which of the following virus is used for management of pest in agriculture:

- a. Baculovirus
- b. Adenoviruses
- c. Lentiviruses
- d. Cucumber mosaic virus

16. In anaerobic respiration all occur except for:

- a. Incomplete oxidation of substrate
- b. Generation of 2 ATP
- c. Involvement of both glycolysis and Krebs cycle
- d. Formation of lactic acid, fumaric acid, calvanic acid etc

17. Which of the following method is not used for next generation sequencing:

- a. Microarray
- b. Illumina sequencing
- c. Pyrosequencing
- d. DNA nanoball sequencing