



Department of Environmental Sciences
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad

MPhil Entry Test
Total Marks: 80

Fall 2020
Time allowed: 90 min

Name: _____ CNIC #: _____

Field/Supervisor Name: _____ (Please select from the "Fields" file)

Note: Part A consists of subject related multiple choice questions (MCQs), while part B consists of MCQs related to quantitative ability, verbal ability and analytical ability.

PART A
(55 marks)

Multiple Choice Questions

Encircle the most appropriate answer.

- The world's population till 2050 will be _____ billion.
a. 7.8 b. 9.8 c. 8.9 d. 10.9
- A high concentration of total dissolved solids, mostly dissolved ions, produces:
a. hard water b. saline water c. alkaline water d. viscous liquid water
- Ideally, the national forest cover should comprise _____ % of the total land.
a. 23 b. 33 c. 43 d. 53
- Biodegradable pollutants are not a serious threat as long as they do not exceed _____ capacity of the environment.
a. degradation b. carrying c. adsorption d. desorption
- Artificial substances, which did not exist in nature before their synthesis by humans, are known as
a. amniotes b. xenobiotics c. resins d. all a, b & c
- In an incineration process, the main part of the ash content of the waste leaves the furnace as a solid residue called
a. fly ash b. slag c. char d. fixed carbon
- The physical property of municipal solid waste that governs the movement of liquids and gases in a landfill is
a. field capacity b. permeability c. moisture d. particle size and distribution
- The largest source of sulfur emissions into air is
a. fossil fuel burning b. coal burning power plant c. motor vehicles d. industrial processes
- _____ is the transfer of DNA mediated by a bacterial virus (*bacteriophage or phage*)
a. transformation b. transduction c. conjugation d. electroporation
- Modern industrialized nations have come to rely heavily on _____ reserves for both energy and as feedstock.
a. coal b. renewable c. fossil d. non-renewable

PART B

(25 marks)

1. ELATED is to DESPONDENT as ENLIGHTENED is to
 - a. MISERABLE
 - b. IGNORANT
 - c. TOLERANT
 - d. AWARE
2. The use of the verb google in the phrase 'google it' represents a case of word formation via
 - a. Coinage
 - b. Conversion
 - c. Borrowing
 - d. Derivation
3. Which one of the followings best describes a research design?
 - a. A way of conducting research that is not grounded in theory
 - b. A framework for every stage of the collection and analysis of data
 - c. The choice between using qualitative or quantitative methods
 - d. The style in which you present your research findings, e.g. a graph
4. What is the synonym of WRETCHED?
 - a. FOOLISH
 - b. POOR
 - c. INSANE
 - d. none of these
5. The word STRINGENT is most clearly the opposite in meaning to
 - a. VEHEMENT
 - b. LENIENT
 - c. MAGNANIMOUS
 - d. GENERAL

Questions 6-8: Six runners, J, K, L, M, N and O participated in a series of races during a sports festival with the following outcomes:

J always finished ahead of N but behind O.

K always finished ahead of L but behind O.

There were no ties.

6. Which of the following could be the order of finish of a race from first to last?
 - a. O, J, K, L, M, N
 - b. O, M, J, N, K, L
 - c. O, J, M, N, L, K
 - d. O, J, K, M, L, N
7. Which of the following must be true of the order of finish for all of the races?
 - a. J finished second
 - b. K finished third
 - c. N finished last
 - d. O finished first
8. For any race, which of the following is a complete and accurate listing of the runners who could have finished ahead of M?
 - a. J, O
 - b. J, O, K
 - c. J
 - d. J, O, K, N
9. Fahad walks 300 meters East, then 100 meters North, then 200 meters South, then 300 meters West then 500 meters North. How far from the start is he?
 - a. 1500 meters
 - b. 800 meters
 - c. 500 meters
 - d. 400 meters
10. If $a - b = 3$ and $a^2 + b^2 = 29$, find the value of ab .
 - a. 18
 - b. 15
 - c. 12
 - d. 10