



GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)

(Deemed to be University)

(Estd. u/s 3 of the UGC Act, 1956), NAAC Accredited with 'A+' Grade

Visakhapatnam | Hyderabad | Bengaluru

GITAM Institute of Science

Department of Biochemistry

PhD Entrance Test 2020-21

Model-Question paper

Duration: 2 hours

Max Marks: 140

Note : This is a sample paper. The main examination paper will be online and consists of 35 questions each in section A and section B

Section A: Research Methodology

1. Research is
 - a. ability to teach a given topic
 - b. obtaining information in a particular field
 - c. ability to analyze
 - d. a scientific and systematic data collection and analysis
2. Which of the following is the first step in starting the research process?
 - a. Searching sources of information to locate problem.
 - b. Survey of related literature
 - c. Identification of problem
 - d. Searching for solutions to the problem
3. Which of the following regarding research is true
 - a. Its, defining problems, formulating hypothesis or suggesting solutions;
 - b. Collecting, organizing and evaluating data;
 - c. Making deductions and reaching conclusions
 - d. All the above
4. The purpose of research is best described as
 - a. Formulating questions and finding answers
 - b. Discovering lacunae in available knowledge
 - c. Obtaining data by observation or experiments
 - d. Identifying pertinent questions and obtaining answers through the application of scientific procedures.
5. Research design strategy encompasses all of the components below except _____.
 - a. data collection design
 - b. sampling design
 - c. instrument development
 - d. data analysis
 - e. all of the above are part of the design strategy
6. Research design strategy encompasses all of the components below except _____.
 - a. data collection design
 - b. sampling design
 - c. instrument development
 - d. data analysis
 - e. all of the above are part of the design strategy

7. Which one of the following is not true of the Descriptive research
- Research carried out to using questionnaires and survey
 - Researcher has control over the variables
 - Study is only observation and data collection
 - Study is used to assess the states of affairs, for a particular object
8. What purpose do clearly stated objectives serve
- state clearly how the research will be done and what conclusions are expected
 - state clearly what the research intends to contribute and justifies the research being carried out
 - state clearly what the research intends to contribute and details how the research will be done
 - states clearly in detail how research will be done and justify why research is being carried out
9. Taking the idea that the more under stress a person is the more he is depressed, who would be the correct hypothesis
- people under more stress are likely to be less depressed
 - greater stress is associated with low levels of depression
 - stress is positively linked with depression
 - none of these
10. "Individuals who face malnutrition as a child show low immunity" If this is the alternate hypothesis, which of the below statements would be the correct null hypothesis?
- Individuals who face malnutrition as a child show high immunity.
 - Individuals who are well nourished as a child show low immunity"
 - Individuals who face malnutrition as a child have similar immunity as, well nourished ones.
 - None of the above

Section B: Biochemistry

1. Humans are unable to digest
- Starch
 - Complex carbohydrates
 - Denatured proteins
 - Cellulose
2. An exothermic reaction is one in which
- Heat is converted to electricity
 - Heat is absorbed
 - Heat is evolved
 - Heat is converted into mechanical work
3. Maximum enzyme activity is observed at
- Acidic pH
 - Neutral pH
 - Basic pH
 - Optimum pH

4. Which of the following is carried out when cAMP functions as a second messenger?
- Acts second in importance to AMP
 - Activates all cytosolic protein kinases
 - Activates the cAMP-dependent protein kinases
 - Acts outside the cell to influence cellular processes
5. Cells dependent solely on glucose as an energy source are
- Liver cells
 - Brain cells
 - Kidney cells
 - Muscle cells
6. In case of basic cell structure, what do an elephant and an oak tree have in common
- They both are eukaryotes
 - They both have a cell nucleus
 - They both have mitochondria
 - All of the above
7. Which of the following is not involved in enzyme regulation
- Covalent Modification
 - Competitive Inhibition
 - Suicide Inhibition
 - Allosteric activation
8. Absorbance at 280nm exhibited by protein is due to
- Aliphatic amino acids
 - All amino acids
 - Non-polar amino acids
 - Aromatic amino acids
9. Which of the following mineral element facilitates insulin binding to cell receptor site
- Zinc
 - Selenium
 - Copper
 - Chromium
10. Clonal selection occurs when antigen is encountered by
- Basophils
 - Eosinophils
 - Mast cells
 - T-cells