



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 Computer Science

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
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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: Computer Science

1. This statement opens a file for writing and destroys all its existing contents, if any:
- Ofstream file ("abc.txt")
 - Ofstream file("abc.txt", ios::nocreate)
 - Ofstream file("abc.txt", ios::write)
 - Ofstream file("abc.txt", ios::prev_erase)
2. Super Keyword is used to _____.
- Refer immediate parent class instance variables
 - Invoke immediate parent class methods.
 - Invoke immediate parent class constructor.
 - All of these
3. A queue is implemented using an array such that ENQUEUE and DEQUEUE operations are performed efficiently. Which one of the following statements is CORRECT (n refers to the number of items in the queue)?
- At most one operation can be performed in $O(1)$ time but the worst case time for the other operation will be, $\Omega(n)$
 - Both operations can be performed in $O(1)$ time
 - The worst case time complexity for both operations will be, $\Omega(n)$
 - Worst case time complexity for both operations will be, $\Omega(\log n)$

4. In a graph 'G', if every node 'u' in 'G' is adjacent to every other node 'v' in 'G', then the graph is said to be
- isolated
 - complete
 - finite
 - strongly connected
5. Thrashing
- Reduces page I/O
 - Decreases the degree of multi-programming
 - Implies excessive page I/O
 - Improves the system performance
6. An association between students and courses is:
- 1:1 relationship
 - 1:M relationship
 - M:N relationship
 - None of these
7. Which Page Replacement Algorithm has minimum number of page faults?
- LRU
 - FIFO
 - Optimal
 - Second Chance Algorithm
8. Which of the following option is true for virtual to physical address run-time mapping?
- CPU
 - Memory Management Unit
 - PCI
 - Operating System
9. With limit registers and relocation, each logical address must be _____ the limit register.
- not equal to
 - less than
 - greater than
 - equal to
10. Inserting an item into the stack when stack is not full is called _____ operation and deletion of item from the stack, when stack is not empty is called _____ operation.
- push, pop
 - insert, delete
 - pop, push
 - delete and insert