



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 Technology

Department of Computer Science & Engineering

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. Essence of both basic and applied research lies in
 - a. market orientation
 - b. scientific method
 - c. performance monitoring research
 - d. costing methods
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. Before searching you should define the timeframe of your search. Why?
 - a. So, you don't find the library busy
 - b. So, you find the most articles
 - c. So, you work when you are most efficient
 - d. So, you do not incur unnecessary costs
4. Why is it important for a researcher to review the literature?
 - a. Because it is traditional
 - b. Because it will find if anyone has done the work before
 - c. Because it identifies like-minded researchers
 - d. Because it shows time has been spent on the subject
5. The literature review will examine:
 - a. all aspects of a topic
 - b. only facts
 - c. only one side of the main argument
 - d. only opinions
6. What do you think might happen if you started a research project, but hadn't written any clear research objectives?
 - a. Confusion about the limits of study
 - b. Collection of data is unlimited
 - c. Identify barriers and concerns
 - d. Only a is correct
 - e. Both a & b is correct

7. Surveying the literature involves
- narrow the problem itself
 - identify the gaps
 - limited information about the existing theories
 - b is correct
 - both a & b is correct
8. The purpose of attribution is
- similar to citation
 - not similar to citation
 - used to quote (or paraphrase all or a portion of an openly licensed work)
 - both a & c
 - none of the above
9. Who is responsible for plagiarism?
- Lecturers and supervisors
 - The participant
 - Institution
 - The researcher
 - All of the above
10. How do you prepare for presentation?
- Writing main argument or conclusion
 - Writing the main points as headings
 - Timing the presentation & discuss the main issue by clear opening and closing line remarks
 - All of the above
 - Only a & b

Section B: Computer Science and Engineering & Information Technology

1. The lexical analysis for a modern language such as Java needs the power of which one of the following machine models in a necessary and sufficient sense?
- Non-deterministic pushdown automata
 - Deterministic pushdown automata
 - Finite state automata
 - Turing machine
2. The number of flip-flops required in a modulo N counter is
- N
 - 2N
 - N+2
 - $\log_2 N$
3. The layer in the OSI model responsible for end-to-end flow control is the layer.
- presentation
 - datalink
 - network
 - transport

4. Which-one of the following statements about normal forms is FALSE?
- BCNF is stricter than 3 NF
 - Lossless, dependency -preserving decomposition into 3 NF is always possible
 - Loss less, dependency – preserving decomposition into BCNF is always possible
 - Any relation with two attributes is BCNF
5. The inorder and preorder traversal of a binary tree are d b e a f c g and a b d e c f g respectively. Find the postorder of the binary tree.
- d e b f g c a
 - e b d f g c a
 - b f g c a d e
 - None of the above
6. A computer uses a memory unit of 256K words of 32 bits each. A binary instruction code is stored in one word of memory. The instruction has four parts: An indirect bit, an operation code, a register code part to specify one of 64 registers, and an address part. The number of bits in the operation code part, ,register code part, and the address part are
- 7, 6, 18
 - 6, 7, 18
 - 18, 7, 6
 - 7, 18, 6
7. If $A=11110000$ $B=00010100$, the values of the flags carry, sign, and zero after performing A-B are
- 1, 0, 1
 - 1, 1, 0
 - 0, 1, 1
 - 1, 1, 1
8. In the expression $A + BC$, the total number of minterms will be
- 2
 - 3
 - 4
 - 5
9. A memory system of size 16 k bytes is to be designed using memory chips which have 12 address lines and 4 data lines each. The number of such chips required to design the memory system is
- 2
 - 4
 - 8
 - 18
10. A digital computer uses a memory unit of 64K x 16 and a cache memory of 1K words and a block size of four words. The no of bits in the tag, index, block and word fields of the address format are
- 8, 8, 10, 2
 - 8, 2, 8, 10
 - 8, 10, 8, 2
 - 10, 8, 8, 2