

Sample Paper PhD (Computer Science) Program Spring-2019

VERBAL				
S.No	Core Areas	Questions	Total Questions	Percentage
01	Synonyms	04	20	20%
	Antonyms	04		
	Use of Preposition	04		
	Reading Comprehension	08		
ANALYTICAL REASONING				
02	Logical Analysis	10	20	20%
	Analytical Reasoning	10		
SUBJECTIVE				
03	Programming Fundamentals	06	60	60%
	Object Oriented Paradigm	06		
	Data Structures and Algorithms	06		
	Digital Logic and Computer Organization	06		
	Operating Systems	06		
	Database Systems	06		
	Software Engineering	06		
	Computer Communication and Networks	06		
	Computer Architecture & Assembly Language	06		
	Theory of Automata and Formal Languages	06		

Total Questions: 100

Total Time: 120 Minutes

1. VERBAL :(20%)

VOCABULARY: SYNONYMS (04 Questions)

Instructions: Sentences are given below with a word underlined in each. Below each sentence a multiple choice is given. Find out the proper word that is **similar in meaning** to the underlined word in each sentence, and shade its answer letter from multiple choice of words A, B, C or D against the corresponding number in the answer sheet.

1. Love is a passion that inspires one to make marvels.

- A. miracles B. puzzles C. wonders D. mazes

2. Love prepares man to surmount great heights and achieve brilliant success.

- A. overcome B. subdue C. vanquish D. defeat

VOCABULARY: ANTONYMS (04 Questions)

Instructions: Sentences are given below with a word underlined in each. Below each sentence a multiple choice is given. Find out the proper word that is **opposite in meaning** to the underlined word in each sentence, and shade its answer letter from multiple choices of words A, B, C or D against the corresponding number in the answer sheet.

1. The romantic gestures testify that every person is lover of one's own self.

- A. falsify B. justify C. intensify D. rectify

2. You are enamoured of only their physical qualities.

- A. bored B. disgusted C. annoyed D. proud

USE OF PREPOSITIONS (04 Questions)

Instructions: Sentences are given below. In each sentence, you have to put the correct preposition. Choose **the correct preposition** for every sentence and shade its answer letter A,B,C or D against the corresponding number in the answer sheet.

1. I came.....an old friend of mine in Liberty Market this morning.

- A. around B. by C. across D. with

2. The region is noted.....its quality cattle.

- A. for B. by C. on D. to

PASSAGE READING (8 Questions)

Reading Comprehension

Read the following passage carefully and answer the questions set below it. Write answer letter A,B,C,D in the answer sheet against the corresponding number.

Long ago when invention of printing press was not yet conceived and made possible, a large number of useful, precious, and rare books were printed and read in manuscript forms. Paper had not yet come in to being. It was china that invented paper first. Later, perhaps in 1560 or so, John Caxton, an Englishman, invented the printing press. Other countries of Europe were yet far behind in these regards. With the invention of printing press tens of scores of books were brought to the printing press for publication. Book markets were created and public libraries established for general reading public. Private libraries and reading rooms came in to existence. Book reading became habit of knowledge seekers. Bibliophiles tended to read books to seek knowledge, know good morals and get entertainment, the last being the most important objective of reading. Rate of literacy increased largely, horizon of knowledge broadened and scope of academic and human development widened to a great extent. Today, keen readers are found all over the world, especially in the countries where education is given due attention and importance. But, regretfully, owing to creation of a host of scientific inventions and devices and role of electronic media, impetus and tendency to reading are diminishing slowly and gradually. And a result, reading is becoming a dying habit.

1. Before the invention of the paper and printing press books were preserved in

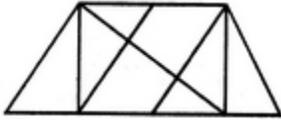
- | | |
|----------------------|----------------------|
| A. memory of readers | B. memory of authors |
| C. handwritten form | D. in printed form |

2. Public Libraries were established for.....

- | | |
|-----------------------------|---------------------------|
| A. literate People | B. highly educated people |
| C. every reader from public | D. scholars |

2. ANALYTICAL REASONING: (20% Questions)

1. Find the number of triangles in the given figure.



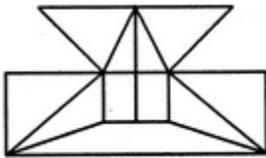
A.8

B.10

C.12

D.14

2. Find the minimum number of straight lines required to make the given figure.



A.16

B.17

C.18

D.19

3. SUBJECTIVE: (60%)

Below are given twenty questions on structures and vocabulary. Multiple choices are given under each sentence with capital letters A, B, C, or D.

Select the correct answer and write letter A, B, C, or D against the corresponding number in the answer sheet.

1.	<p>What will happen, if I compile and execute the following program?</p> <pre>1. class Test 2. { 3. public static void Hello () 4. { 5. System.out.println ("Testing of static method"); 6. } 7. } 8. public class TestStatic 9. { 10. public static void main (String args []) 11. { 12. Test.Hello (); 13. } 14. }</pre> <p>A. The program will compile and execute successfully B. The program will generate error at line 12. C. The program will compile successfully but will not execute D. None of the above</p>
2.	<p>Consider the following pseudo-code.</p> <pre> x := 1; i := 1; while (x ≤ 1000) begin x := 2^x; i := i + 1; end;</pre> <p>What is the value of <i>i</i> at the end of the pseudo-code?</p> <p>A. 4 B. 5 C. 6 D. 7</p>
3.	<p>The address of a variable can be stored in a</p> <p>A. Pointer B. Another variable C. Class D. Function</p>

4.	<p>Dynamic method binding in java is also known as</p> <p>A. Polymorphism B. Encapsulation C. Abstraction D. Data hiding</p>
5.	<p>Operator overloading is not supported in</p> <p>A. C B. C++ C. C# D. Java</p>
6.	<p>Which of the following algorithms is used to find the shortest path in graph</p> <p>A. Prim's Algorithm B. Dijkstra's Algorithm C. Karskal's Algorithm D. Depth First Search Algorithm</p>
7.	<p>There are a number of logarithmic sorting algorithms whose worst and average case performance is logarithmic _____.</p> <p>A. $N\log N$ B. $N\log N^2$ C. $N^2\log N$ D. None of the above</p>
8.	<p>A process said to be in _____ state if it was waiting for an event that will never occur.</p> <p>A. Safe B. Unsafe C. Starvation D. Dead lock</p>
9.	<p>The _____ memory management technique divides physical memory into fixed-sized blocks, called frames and divides logical memory into blocks of the same size, called pages.</p> <p>A. Multi-programming with fix number of tasks or MFT B. Multi-programming with variable number of tasks or MVT C. Paging D. Segmentation</p>
10.	<p>The main difference between a Latch & a Flip flop is _____.</p> <p>A. Toggling B. Triggering C. Storage D. Clock</p>

11.	<p>For Boolean Functions of more than 5 variables, _____ is the most convenient minimization method.</p> <p>A. Truth-Table B. K-Map C. Quine Mc-kluskey D. SOP conversion</p>
12.	<p>Register whose each bit specify a different meaning is</p> <p>A. Flag Register B. Pointer Register C. Accumulator Register D. Index Register</p>
13.	<p>A machine cycle refers to</p> <p>A. Fetching an instruction B. Clock speed C. Fetching, decoding and executing an instruction D. Executing an instruction</p>
14.	<p>How many address lines are needed to address each memory locations in a 2048 x 4 memory chip?</p> <p>A. 8 B. 10 C. 11 D. 12</p>
15.	<p>The HAVING clause does which of the following?</p> <p>A. Acts like a WHERE clause but is used for groups rather than rows B. Acts like a WHERE clause but is used for rows rather than columns C. Acts like a WHERE clause but is used for columns rather than groups D. Acts EXACTLY like a WHERE clause</p>
16.	<p>If two attributes <i>A</i> and <i>B</i> have a many-to-one attribute relationship, it is shown as</p> <p>(A) $A \rightarrow B$ and $B \rightarrow A$ (B) $A \rightarrow B$, but B not $\rightarrow A$ (C) $B \rightarrow A$, and $A \leftarrow B$ (D) A not $\rightarrow B$ and B not $\rightarrow A$</p>
17.	<p>A Database developer Ali executes the following statement: Create table ANIMALS as select * from master.animals; What is the effect of this statement?</p> <p>A. A table named ANIMALS will be created in the MASTER schema with the same data as the ANIMALS table owned by Ali. B. A table named Ali will be created in the ANIMAL schema with the same data as the ANIMALS table owned by MASTER. C. A table named ANIMALS will be created in the Ali's schema with the same data as the ANIMALS table owned by MASTER. D. A table named MASTER will be created in the ANIMAL schema with the same data as the Ali table owned by ANIMALS.</p>

18.	<p>A set of activities whose goal is the development or evolution of software is known as</p> <p>A. Software engineering B. Software process C. System Engineering D. System analysis and design</p>
19.	<p>You are a project manager working on gathering requirements and establishing estimates for the project. Which process group are you in?</p> <p>A. Planning B. Executing C. Initiating D. Monitoring and Controlling</p>
20.	<p>Which development model is supported by the COCOMO II model?</p> <p>A. Water fall model B. Spiral model C. Evolutionary development model D. Incremental delivery</p>
21.	<p>CSMA/CA protocol is used at which layer of OSI:</p> <p>A. Layer 3 B. Layer 2 C. Layer 4 D. Layer 7</p>
22.	<p>_____ wireless technology allows speeds up to 54Mbps</p> <p>A. IEEE803.11a B. IEEE803.11b C. IEEE802.11a D. IEEE802.11g</p>
23.	<p>What is the port number of the HTTP protocol?</p> <p>A. 80 B. 25 C. 23 D. 20/21</p>
24.	<p>The _____ is very simple language consisting of propositional symbols and logical connectives. It can handle propositions that are known true, known false, or completely unknown.</p> <p>A. Propositional Logic B. First-order logic C. Probabilistic logic D. Fuzzy Logic</p>

25.	A _____ escapes local optima, and is complete and optimal given a long enough evolution time and large population size. A. Genetic algorithm B. Local search algorithms C. Informed search algorithms D. Uninformed search algorithms
26.	To examine whether a certain FA accepts any words, it is required to seek the paths from _____ state. A. Final to initial B. Final to final C. Initial to final D. Initial to initial
27.	In Three-pass compiler _____ is used for code improvement or optimization. A. Front End B. Middle End C. Back End D. Both Front end and Back end