

TEST PAPER

Marks: 100

Time: 60 minutes

ROLL NO.: _____	NAME: _____
SIGNATURE: _____	DATE / TIME: _____

INSTRUCTIONS FOR THE CANDIDATES

1.	Before attempting the paper carefully read out all the Instructions & Examples given on Side 1 of Answer Sheet (OMR Sheet) supplied separately.
2.	At the start of the examination, please ensure that all pages of your Test booklet are properly printed; your Test booklet is not damaged in any manner and contains 100 questions. In case of any discrepancy the candidate should immediately report the matter to the invigilator for replacement of Test Booklet. No claim in this regard will be entertained at the later stage.
3.	An OMR Answer Sheet is being provided separately along with this Test booklet. Please fill up all relevant entries like Roll Number, Test Booklet Code etc. in the spaces provided on the OMR Answer Sheet and put your signature in the box provided for this purpose.
4.	Make sure to fill the correct Test booklet code on Side 2 of the OMR Answer Sheet. If the space for the Booklet Code is left blank or more than one booklet code is indicated therein, it will be deemed to be an incorrect booklet code & Answer Sheet will not be evaluated. The candidate himself/herself will be solely responsible for all the consequences arising out of any error or omission in writing the test booklet code.
5.	This Test Booklet consists of 08 pages containing 100 questions. Against each question four alternative choices (1), (2), (3), (4) are given, out of which one is correct. Indicate your choice of answer by darkening the suitable circle with BLACK/BLUE pen in the OMR Answer Sheet supplied to you separately. Use of Pencil is strictly prohibited. More than one answer indicated against a question will be deemed as incorrect response.
6.	The maximum marks are 100. Each question carries one mark. There will be no negative marking. The total time allocated is 60 minutes.
7.	Do not fold or make any stray marks on the OMR Answer Sheet. Any stray mark or smudge on the OMR Answer Sheet may be taken as wrong answer. Any damage to OMR Answer Sheet may result in disqualification of the candidate.
8.	On completion of the test, candidate must hand over the OMR Answer Sheet to the invigilator on duty in the room/hall.
9.	Use of Mobile phones and calculators etc. are not allowed.
10.	Keep all your belongings outside the Examination hall. Do not retain any paper except the ADMIT CARD.

1	One of the following Memories has the highest speed in terms of data transfer to and from the processor. (1) Cache Memory (2) Primary Memory (3) Secondary Memory (4) External memory
2	What is not part of the CPU (1) Control Unit (2) Arithmetic and Logical Unit (3) Registers (4) Power Unit
3	One of the following Memories has the highest speed in terms of data transfer to and from the processor. (1) L1 Cache (2) RAM (3) Hard Disk (4) L3 Cache
4	The sequence in which the speed is increasing in ascending order a. RAM b. Hard disk c. Cache d. Thumb Drive/Memory Stick (1) dbac (2) bdac (3) badc (4) abdc
5	Match the following in the given sequence i. Software a. Brain of the computer ii. Program b. Software Embedded in Hardware iii. Firmware c. Collection of related Programs iv. CPU d. Set of instructions to perform a task (1) i-a ii-b iii-c iv-d (2) i-a ii-b iii-d iv-c (3) i-c ii-d iii-a iv-b (4) i-c ii-d iii-b iv-a
6	Match the following in the given sequence i. Arithmetic Instructions a. perform Boolean operations ii. Logical Instructions b. can change the sequence of execution iii. I/O instructions c. perform numerical calculations iv. Program Control Instructions d. transfer information to/from CPU to I/O devices (1) i-c ii-a iii-d iv-b (2) i-a ii-c iii-d iv-b (3) i-b ii-c iii-d iv-a (4) i-a ii-b iii-d iv-c
7	2^{30} bytes of memory is called (1) 1 KB (2) 1 MB (3) 1 GB (4) 1 TB
8	10^6 bytes of memory is called (1) 1 KB (2) 1 MB (3) 1 GB (4) 1 TB
9	Control Bus Carries (1) Data (2) Address (3) Read, Write Signal (4) Data & Address
10	The goodness of an algorithm is most often expressed in terms of its (1) Best Case complexity (2) Average Case complexity (3) Worst Case complexity (4) Random case complexity
11	How many time we should half the number n to reach 1. (1) n (2) $\log(n)$ (3) $n(\log(n))$ (4) n^2
12	Find the complexity of the following code for (i=0; i<n;i++) {for (j=0; j<n;j++){ for (k=0; k<n;k++) {i=j; }}} (1) $O(n)$ (2) $O(n^2)$ (3) $O(n \log n)$ (4) $O(n^3)$
13	Which of the following uses Divide and Conquer Approach (1) Selection Sort (2) Bubble sort (3) Linear Search (4) Binary Search
14	$(1010.1110)_2 = (\quad)_10$ (1) 4.2345 (2) 9.456 (3) 10.875 (4) 11.657
15	$(AABC)_{16} = (\quad)_8$ (1) 123456 (2) 125274 (3) 127890 (4) 324512
16	Which if the following operation is the easiest in terms of time as a resource (1) Accessing an element (2) deletion of an element (3) Insertion of an element (4) creation of Array of given size
17	An array is not full, The time complexity of Insertion in an array at a specific position is (1) $O(n \log n)$ (2) $O(1)$ (3) $O(n)$ (4) $O(\log n)$
18	An array of size 100 is given and the memory addressing is byte by byte. If The base address of the array is 1000 and every record consists of 40 bytes then address of array[10] will be (1) 1040 (2) 1400 (3) 1440 (4) 1080
19	There are 20 people who work in an office together. Four of these people are selected to attend four different conferences. The first person selected will go to a conference in New Delhi, the second will go to Kolkata, the third to Chennai, and the fourth to Mumbai. How many such selections are possible? (1) 116280 (2) 80 (3) 4845 (4) none of these
20	Total numbers of ascending runs in the sequence 4 6 7 2 9 1 2 8 9 3 0 (1) 3 (2) 5 (3) 7 (4) 9

21	<p>Match the following in the given sequence</p> <p>i) Stack a. LIFO ii) Queue b. FIFO iii) Array c. continuous memory iv) Link List d. uses pointers</p> <p>(1) i-b ii-a iii-d iv-c (2) i-a ii-b iii-c iv-d (3) i-a ii-b iii-d iv-c (4) i-b ii-a iii-c iv-d</p>
22	<p>Stack does not have one of the following methods</p> <p>(1) Pop (2) push (3) Top (4) replace</p>
23	<p>Which of the following permutation can be obtained in the output (in the same order) using a stack assuming that the input is the sequence 1, 2, 3, 4, 5 in that order?</p> <p>(1) 3, 4, 5, 1, 2 (2) 3, 4, 5, 2, 1 (3) 1, 5, 2, 3, 4 (4) 5, 4, 3, 1, 2</p>
24	<p>What will be the result of the LAST operation in the given sequence of operations: PUSH(&); PUSH(\$); PUSH(@);TOP(); POP(); PUSH(#); POP();POP(); PUSH(%); POP();</p> <p>(1) @ (2) & (3) # (4) %</p>
25	<p>What will be the output of the following C program</p> <pre>main() { int count, i, x; for(count=1,x=0,i=0; count<=4;count++,i++) { x=i%2; if(x==0) continue; else { printf("%d\n",x); continue; } } printf("%d",count); }</pre> <p>(1) 2 4 5 (2) 1 1 5 (3) 2 5 5 (4) 1 2 2</p>
26	<p>What will be the output of the following program</p> <pre>main() { int k = 3; switch(k) { default : k += 2; case 4 : k +=1; case 5: --k; } }</pre> <p>(1) 5 (2) 3 (3) 2 (4) 4</p>
27	<p>What will be the output of the following program</p> <pre>main() { int y, x = 1, total = 0; while (x <= 10) { y = x * x; total += y; ++x; } // end while printf("%d", total); }</pre> <p>(1) 81 (2) 1 (3) 385 (4) 45</p>

28	What will be the output of the following program <pre>main() { int i=0,x=0; for(i=1;i<10;++i) { if(i%2 == 1) x += i; else x--; printf("\n%d",x); break; } printf("\nx=%d",x); }</pre> (1) 1 1 (2) 5 5 (3) 10 1 (4) 10 10
29	Convert (A-B)*(D/E) into a postfix expression (1) AB-DE/* (2) A*BD/E- (3) ABDE-/* (4) /-ABDE
30	The fact that the same operation may apply to two or more classes is called what? (1) Inheritance (2) Polymorphism (3) Encapsulation (4) Multiple classification
31	The object-oriented development life cycle is which of the following? (1) Analysis, design, and implementation steps in the given order and using multiple iterations. (2) Analysis, design, and implementation steps in the given order and going through the steps no more than one time. (3) Analysis, design, and implementation steps in any order and using multiple iterations. (4) Analysis, design, and implementation steps in any order and going through the steps no more than one time
32	Multiplicity is the same as what concept for an ERD? (1) Relationship (2) Entity (3) Attribute (4) Cardinality
33	Composition is a stronger form of which of the following? (1) Aggregation (2) Encapsulation (3) Inheritance (4) All of the above.
34	Which of the following applies to a class rather than an object? (1) Query (2) Scope (3) Update (4) Constructor
35	Row is synonymous with the term: (1) record. (2) column. (3) relation. (4) field.
36	The primary key is selected from the: (1) composite keys. (2) determinants. (3) candidate keys. (4) foreign keys.
37	Which of the following is a group of one or more attributes that uniquely identifies a row? (1) Key (2) Tuple (3) Determinant (4) Relation
38	A functional dependency is a relationship between or among: (1) tables. (2) relations. (3) rows. (4) attributes.
39	A tuple is a(n): (1) Column of a table. (2) two dimensional table. (3) row of a table. (4) key of a table.
40	The DROP TABLE statement: (1) deletes the table structure only. (2) deletes the table structure along with the table data. (3) works whether or not referential integrity constraints would be violated. (4) is not an SQL statement.
41	For what purposes are views used? (1) To hide columns only (2) To hide rows only (3) To hide complicated SQL statements only (4) All of the above are uses for SQL views.
42	What is the best data type definition for Oracle when a field is alphanumeric and has a length that can vary? (1) VARCHAR2 (2) LONG (3) CHAR (4) NUMBER
43	In which header file is isalpha() declared? (1) conio.h (2) stdio.h (3) ctype.h (4) maths.h
44	Which one of the following OOP concepts enables reusability of components? (1) Inheritance (2) Encapsulation (3) Polymorphism (4) All of the above
45	The term operator overloading in C++ refers to: (1) Inheritance (2) Message passing (3) Polymorphism (4) None
46	In C++ a function contained within a class is called (1) a member function (2) an operator (3) a class function (4) a method

47	What value must a constructor return? (1) A pointer to the class. (2) An object of the class. (3) A status code determining whether the class was destructed correctly (4) Constructors do not return a val
48	A page fault occurs (1) when the page is not in the memory (2) when the page is in the memory (3) when the process enters the blocked state (4) when the process is in the ready state
49	What is a shell? (1) It is a hardware component (2) It is a command interpreter (3) It is a part in compiler (4) It is a tool in CPU scheduling
50	Routine is not loaded until it is called. All routines are kept on disk in a relocatable load format. The main program is loaded into memory & is executed. This type of loading is called _____ (1) Static loading (2) Dynamic loading (3) Dynamic linking (4) Overlays
51	In the blocked state (1) the processes waiting for I/O are found (2) the process which is running is found (3) the processes waiting for the processor are found (4) none of the above
52	What is the memory from 1K - 640K called ? (1) Extended Memory (2) Normal Memory (3) Low Memory (4) Conventional Memory
53	Virtual memory is _____. (1) An extremely large main memory (2) An extremely large secondary memory (3) An illusion of extremely large main memory (4) A type of memory used in super computers.
54	The process related to process control, file management, device management, information about system and communication that is requested by any higher level language can be performed by _____. (1) Editors (2) Compilers (3) System Call (4) Caching
55	If the Disk head is located initially at 32, find the number of disk moves required with FCFS if the disk queue of I/O blocks requests are 98,37,14,124,65,67. (1) 10 (2) 324 (3) 315 (4) 321
56	Multiprogramming systems _____. (1) Are easier to develop than single programming systems (2) Execute each job faster (3) Execute more jobs in the same time (4) Are used only on large main frame computers
57	Which is not the state of the process ? (1) Blocked (2) Running (3) Ready (4) Privileged
58	The problem of thrashing is effected scientifically by _____. (1) Program structure (2) Program size (3) Primary storage size (4) None of the above
59	The state of a process after it encounters an I/O instruction is _____. (1) Ready (2) Blocked/Waiting (3) Idle (4) Running
60	The number of processes completed per unit time is known as _____. (1) Output (2) Throughput (3) Efficiency (4) Capacity
61	_____ is the situation in which a process is waiting on another process, which is also waiting on another process ... which is waiting on the first process. None of the processes involved in this circular wait are making progress. (1) Deadlock (2) Starvation (3) Dormant (4) None of the above
62	Which of the following file name extension suggests that the file is Backup copy of another file ? (1) TXT (2) COM (3) BAS (4) BAK
63	Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy? (1) Time-sharing (2) SPOOLing (3) Preemptive scheduling (4) Multiprogramming
64	A critical region (1) is a piece of code which only one process executes at a time (2) is a region prone to deadlock (3) is a piece of code which only a finite number of processes execute (4) is found only in Windows NT operation system
65	The mechanism that bring a page into memory only when it is needed is called _____. (1) Segmentation (2) Fragmentation (3) Demand Paging (4) Page Replacement
66	PCB = (1) Program Control Block (2) Process Control Block (3) Process Communication Block (4) None of the above

67	FIFO scheduling is _____. (1) Preemptive Scheduling (3) Deadline Scheduling	(2) Non Preemptive Scheduling (4) Fair share scheduling
68	Switching the CPU to another Process requires to save state of the old process and loading new process state is called as _____. (1) Process Blocking	(2) Context Switch (3) Time Sharing (4) None of the above
69	Which directory implementation is used in most Operating System? (1) Single level directory structure (3) Tree directory structure	(2) Two level directory structure (4) Acyclic directory structure
70	If a computer on the network shares resources for others to use, it is called (1) Server	(2) Client (3) Mainframe (4) none
71	For large networks, which topology is used (1) Bus	(2) Star (3) Ring (4) Mesh
72	Which layer decides which physical pathway the data should take. (1) Application	(2) Network (3) Physical (4) Transport
73	X.25 is an example of _____ network (1) Circuit switched	(2) Packet switched (3) Frame switched (4) None of the above
74	In Print server which is a buffer that holds data before it is send to the printer. (1) Queue	(2) Spool (3) Node (4) Jobs
75	Which connector STP uses? (1) BNC	(2) RJ-11 (3) RJ-45 (4) RJ-69
76	What is the central device in star topology? (1) STP server	(2) Hub/switch (3) PDC (4) Router
77	What is max data capacity for optical fiber cable? (1) 10 mbps	(2) 100 mbps (3) 1000 mbps (4) 10000 mbps
78	Which of the following architecture uses CSMA/CD access method? (1) ARCnet	(2) Ethernet (3) ATM (4) None of the above
79	A router: (1) forwards a packet to all outgoing links, except the link upon which the packet originated. (2) forwards a packet to the next free outgoing link. (3) determines on which outgoing link a packet is to be forwarded. (4) forwards a packet to all outgoing links.	
80	The Internet is an example of a: (1) packet switched network. (3) cell switched network.	(2) circuit switched network. (4) frame switched network
81	A class can be converted to a thread by implementing the interface ____ (1) Thread	(2) Runnable (3) both a and b (4) none
82	What is byte code in the context of Java? (1) The type of code generated by a Java compiler (2) The type of code generated by a Java Virtual Machine (3) It is another name for a Java source file (4) It is the code written within the instance methods of a class	
83	Which of the following are legal declarations for non-nested classes and interfaces? (1) final abstract class Test{}	(2) public static interface Test{}
84	Which component of the .NET Framework allows you to create character-based applications that can be executed from the command line? (1) Common Language Runtime	(2) Console Applications (3) Web Forms (4).NET Class Framework
85	You are adding a data view to a Windows Form. You wish to view records that are current. Which property of the data view should you set? (1) RowFilter	(2) RowStateFilter (3) AllowDelete (4) Sort
86	You want to debug a Web-based ASP.NET application. But for some cause debugging information is not shown. What could be missing? (1) <%@ Page Debug="true" %>	(2) <%@ Application Debug="true" %> (3) <%@ Page Trace="true" %> (4) <%@ Application Trace="true" %>
87	What ASP.NET object encapsulates the state of the client and the browser? (1) Application object.	(2) Session object. (3) Response object. (4) Request object.
88	You are developing a web application that is retrieving historical library information from a database server and displays it to the users of your application. What cache strategy will give you the best performance? (1) Use the output cache.	(2) Use the cache object. (3) Use the ASP.NET central cache. (4) Use the client cache

89	NET remote server object must implement? (1) IUnknown (2) IMarshalByValue (3) IMarshalByRef (4) ISerializable
90	What property is used on the DataTable to indicate conflicts after update method is called? (1) HasErrorConflict (2) HasError (3) HasCollision (4) HasDataError
91	What is the fastest way to concat strings in ASP.NET ? What should you do? (1) Write code that uses the Append method of the StringBuilder object. (2) Write code that uses the Substring method of the String object. (3) Write code that uses the Concat method of the String object. (4) Write code that uses the plus-sign (+) operator to concatenate the strings.
92	Which access method is used for obtaining a record from a cassette tape? (1) Direct (2) Sequential (3) Random (4) All of the above
93	The average time necessary for the correct sector of a disk to arrive at the read write head is (1) Down time (2) Seek time (3) Rotational delay (4) Access time
94	A 20-bit address bus allows access to a memory of capacity (1) 1 Mb (2) 2 Mb (3) 32 Mb (4) 64 Mb
95	Two main measures for the efficiency of an algorithm are (1) Processor and memory (2) Complexity and capacity (3) Time and space (4) Data and space
96	The fields in a class of a C++ program are by default (1) protected (2) public (3) private (4) None of these
97	Which looping process is best used when the number of iterations is known? (1) for (2) while (3) do-while (4) all looping processes require that the iterations be known
98	In C++, $14 \% 4 =$ (1) 1 (2) 2 (3) 3 (4) 4
99	If the program completes executing successfully, what value should the function main() return? (1) 0 (2) 1 (3) void (4) 2
100	Which of the following sorts is quickest when sorting the following set: 1 2 3 5 4 (1) Quick Sort (2) Bubble Sort (3) Merge Sort (4) Heap Sort

Rough Work