QUESTION PAPER - 2016 (T.S)

COMPUTER SCIENCE & ENGINEERING

Q.1 The class which is inherited by parent class is termed as
(1) base class (2) derived class
(3) member of class (4) public member of class

Q.2 A pointer to the base class can hold address of
(1) only base class object
(2) only derived class object
(3) base class object as well as derived class object
(4) only base class

Q.3 Consider the following statements:
int x = 22, y = 15;
x = (x>y) ? (x+Y) : (x–y);
What will be the value of x after executing these statements
(1) 22 (2) 37
(3) 7 (4) error, cannot be executed

Q.4 Which of the following operator can be overloaded through friend function
(1) --> (2) = (3) ( ) (4) *

Q.5 What would be the output of the following program
iont main()
{ intx,y = 10,z = 10
x = (y= =z);cout< <x;
return.0;}
(1) 0 (2) 1 (3) syntax error (4) 10

Q.6 In C++, dynamic memory allocation is accoplished with the operator
(1) new (2) this (3) size of ( ) (4) delete

Q.7 Which class does not override the equals () and hash code() methods, inheriting them directly from class object
(1) java.lang.string Buffer (2) java.lang.string
(3) java.lang.double (4) java.lang.character

Q.8 Java language has support for which of the following types of comment
(1) block,line and javadoc (2) javadoc, literal and string
(3) javadoc, char and string (4) single, multiple and quote

Q.9 Which of the following statement is correct

(1) for positive two numbers, result of operators >> and >>> are same

(2) java provides two operators to do left shift <<< and <<

(3) >> is the zero fill right shift operator

(4) >>> is the signed right shift operator

Q.10 What is the output of the given java code snippet class c 1 {public static void main (string a []){

```
c 1 ob 1 = new c 1 ();
object ob 2 = ob 1;
system.out.print1n(ob2 instance of object);
system.out.print1n(ob2 instance of c 1);}}
```

(1) true, false (2) false, true (3) true, true (4) compile time error

Q.11 What is the output of the given java code snippet class bike{}

```
class arr extends bike {
public static viod main(string{]args) {
arr[] a1 = new arr [2];
bike[]a 2;
a 2 = a 1;
arr[]a3;
a3 = a1
system.out.print1n(a3);}}
```


(1) compile time error at line 3 (2) compile time error at line 5

(3) runtime exception (4) garbage value

Q.12 What is the output of the given java code snippet

```
class C{
public static void main (string [] args 0{
byte b1 = 33;        //1
b1++;                //2
byte b2 = 55;        //3
b2 = b1 + 1;         //4
system.out.print1n(b1+""+b2);
}}
```

(1) compile time error at line 2 (2) compile time error at line 4

(3) 34, 56 (4) runtime exception

Q.13 When the JVM runs out of memory, which exception will be thrown

(1) memory bound exception (2) out of memory error

(3) out of range exception (4) null reference exception

Q.14 Which exception is thrown by red() method

(1) exception (2) file not found exception

(3) read exception (4) IO exception

Q.15 Which of the following sequence of method calls take place when an applet begins

(1) init(), start(), create() (2) start(), init(), paint()

(3) init(),start(), paint() (4) start(), paint(), destroy()

Q.16 On invoking repaint() method for a component, which method is invoked by AWT

(1) draw() (2) show() (3) update() (4) paint()

Q.17 A file that specifies how the screen is divided into frames is called as

(1) frame-table (2) table link (3) framediv (4) frameset

Q.18 Which of the following tag helps to add a paragraph break after the text in HTML document

(1) <PARAGRAPH> (2) <P>

(3)
 (4) <NEXTLINE>

Q.19 How to define target in new page in HTML

(1) click Here

(2) click Here

(3) <a href = "http//....com/" target = "@blank"> click Here<t/a>

(4) <a href = "http://....com/" target = "#blank"> click Here</a.

Q.20 XLL definition is used along with XML to specify the

(1) data type of the contents of XML document

(2) presentation of XML document

(3) links with other document

(4) structure of XML document

Q.21 To connect database to ASP,_____ object is created in the first step

(1) DBMS connention (2) ADO connection

(3) ASP connection (4) ODBC connection

Q.22 Which layer of the OSI reference model handles flow control and error recovery

(1) application layer (2) presentation layer

(3) transport layer (4) network layer

Q.23 SMTP is a

(1) networking protocol

(2) protocol used for transferring message between and user & mail server

(3) protocol used for smart card message interchange

(4) encryption standard

Q.24 LDAP stands for

(1) light weight data access protocol

(2) light weight directory access protocol

(3) large data access protocol

(4) large directory access protocol

Q.25 Which of the following is functionally complete set

(1) {AND, OR} (2) {NAND, NOR} (3) {NAND} (4) {NOR, NOT}

Q.26 Which property holds true for NAND and NOR operations

(1) both associative and commutative (2) commutative only

(3) associative only (4) transitive only

Q.27 What is the simplified expression with minimum number of literals for the given function

F (x, y, z) = x' y' z + xy' z + + xyz

(1) xy' + xz (2) y'z + x' y' z + xyz

(3) xyz + x' y' (4) xyz + x' y' z

Q.28 Which of the following is I dempotence law

(1) x+xy=x (2) x(x+y)=x (3) x+x=x (4) 1+x=1

Q.29 To design 8×1 multiplexer using 2×1 multiplexer only, how many 2×1 multiplexer are required

(1) 7 (2) 6 (3) 5 (4) 4

Q.30 How many number of boolean function can be formed with 3-variables

(1) 8 (2) 16 (3) 256 (4) 32

Q.31 To design a counter for the sequence 1, 2, 3, 4, 5, 6, 7, 8, 1, 2, 3,..... how many flip-flops are required

(1) 3 (2) 4 (3) 5 (4) 2

Q.32 How many numbers of bits are required to code the 26 alphabets, 10 digits and 10 special characters

(1) 6 (2) 5 (3) 4 (4) 16

Q.33 The systematic reduction of logic circuits is accoplished by

(1) using boolean algebra (2) symbolic reduction

(3) TTL logic (4) using a truth table

Q.34 How many numbers 1's are present in the binary representation of : 15 × 256 + 5 × 16 + 3

(1) 2 (2) 5 (3) 10 (4) 8

Q.35 Which one of the following boolean expressions is not logically equivalent to all other expressions

(1) wxy' + wz' + wxyz + wy'z (2) wx + wy' + wyz'

(3) wx + wy' + wz' (4) w + x + y' + z'

Q.36 What is the additional logic required to convert D flip-flop into T flip-flop

(1) $D = T.Q_n$ (2) $D = T$ (3) $D = T+Q_n$ (4) $D = T \oplus Q_n$

Q.37 Which segment register is referred by DI register during string manipulations instructions in 8086 processor architecture

(1) extra segment (2) code segment (3) stack segment (4) data segment

Q.38 Which flag acts as borrow flag for SBB instruction in 8086 architecture

(1) auxillary flag (2) carry flag (3) parity flag (4) trap flag

Q.39 How many number of the times the instruction sequence given below will loop before coming out of loop

MOVAL,00h

A1 : INCAL

JZNAI

(1) 00 (2) 01 (3) 255 (4) 256

Q.40 Which microprocessor pins are used to request and acknowledge a DMA transfer

(1) reset and ready (2) ready and wait

(3) HOLD and HLDA (4) BSR and BSRA

Q.41 How many number of address lines are required to address a memory of size 32K

(1) 15 lines (2) 16 lines (3) 18 lines (4) 14 lines

Q.42 What is the size of each segment in 8086

(1) 64 KB (2) 24 KB. (3) 50 KB (4) 16 KB

Q.43 A computer system stores integers in N-bit one's complement representation. What is the range of Integral values, n, that can be stored

(1) $-2^{N-1} < n < 2^{N-1}$ (2) $-2^{N-1} < n < 2^{N-1}-1$

(3) $-2^{N-1} <= n <= 2^{N-1}$ (4) $-2^{N-1} < n <= -2^{N-1}$

Q.44 In a cache memory syste, cache access time is 10 ns and miss rate is 50% and the main memory access time is 100 ns. What is the average access time

(1) 35 ns (2) 60 ns (3) 45 ns (4) 110 ns

Q.45 A computer system stores floating-point numbers with a 16-bit mantissa and an 8-bit exponent, each in two's complement form. What is the smallest and largest positive values that can be stored in this system

(1) 1×10^{-128} and $2^{15} \times 10^{128}$ (2) 1×10^{-256} and $2^{15} \times 10^{255}$

(3) 1×10^{-128} and $2^{15} \times 10^{127}$ (4) 1×10^{-128} and $(2^{15}-1) \times 10^{127}$

Q.46 In which memory write through technique is used for updating data

(1) cache memory (2) auxillary memory

(3) virtual memory (4) secondary memory

Q.47 The program counter register contains 85 AC and the address part of the instruction contains 125. If the relative addressing mode is applied, What is the effective address

(1) 85 AC (2) 85 A 1 (3) 86 CF (4) 86 DI

Q.48 Which register keeps track of instructions of a program stored in memory

(1) memory register (2) instruction register

(3) program counter (4) address register

Q.49 Which of the following instruction format is used in stack organised computer

(1) three-address instruction format (2) two-address instruction format

(3) zero-address instruction format (4) ISC instruction format

Q.50 Which of the following interrupt is non-maskable interrupt

(1) INTR (2) RST 7.5 (3) RST 6.5 (4) TRAP

Q.51 An interface that provides I/O transfer of data directly to and from the memory unit and peripheral is termed as

(1) D/A converter (2) serial interface

(3) parallel data transfer (4) DMA

Q.52 Which interface that provides a method for transferring binary information between internal storage and external devices

(1) I/O interface (2) input interface

(3) output interface (4) I/O bus

Q.53 The complexity of binary search algorithm is tree data structure is

(1) O(h) where h is height of tree (2) O(n log h) where h is height of tree

(3) O(h*h) where h is height of tree (4) O(n*h) where h is height of tree

Q.54 The maximum number of comparisons required to search an element using linear search in an array of size 11

(1) 11 (2) 10 (3) 1 (4) 12

Q.55 In which data structure, an insertion can perform at one end and deletion at other end

(1) stack (2) queue

(3) stack and queue (4) singly linked list

Q.56 The inorder and postorder traversal of tree is 825163 and 852631. What is the preorder traversal of the given binary tree

(1) 835361 (2) 128536 (3) 852361 (4) 215863

Q.57 A tree T with only one vertex is termed as

(1) directed graph (2) undirected graph (3) vertex tree (4) trivial tree

Q.58 Which operations are performed efficiently by doubly linked list when compared to singly linked list

(1) deleting a node whose location is given

(2) searching an unsorted list for a given element

(3) inserting a node after the node with a given location

(4) traversing the list to process each node

Q.59 What is the best and average time complexity of quick sort algorithm
(1) O (log n) where n is the number of elements
(2) O (n log n) where n is the number of elements
(3) O (n) where n is the number of elements
(4) O (n*n log n) where n is the number of elements

Q.60 Five elements are pushed in a stack (A, B, C, D and E). The stack is popped out four times and each element is inserted in a queue. Then, two elements are deleted from the queue and pushed back on the stack. Next one item is popped from the stack. The popped item is
(1) A (2) B (3) C (4) D

Q.61 What is the equivalent postfix notation for the given infix expression A + (B – C)*D)
(1) A+B–C*D (2) +A*–BCD (3) ABC–D*+ (4) A+BC–D*

Q.62 A directed acyclic graph is termed as
(1) tree (2) list (3) directed graph (4) circular list

Q.63 Which of the following sorting algorithm does not have a worst-case running time of $O(n^2)$
(1) insertion sort (2) merge sort (3) quick sort (4) bubble sort

Q.64 What is the output of the following C language code snippet

```
int a = 4;
printf("%d",a);
printf("%d",a++);
printf("%d",a);
```

(1) 4 4 5 (2) 5 5 5 (3) 5 5 6 (4) 4 5 5

Q.65 Which of the following statement about function declaration and definition is true
(1) the function call is found in the called function
(2) the function declaration requires that the parameter be named
(3) the definition header concludes with a semi-colon(;)
(4) the function definition contains the executable statements that perform the function's task

Q.66 Which of the following statement will generate a random number in the range 30 to 50
(1) (rand ()) (2) (rand()%20+1)
(3) (rand()%21)+20 (4) (rand()%21)+30

Q.67 Which of the following is not a standard file stream
(1) stdin (2) stdfile (3) stderr (4) stdout

Q.68 Which of the following statement will not add 1 to a variable
(1) a++; (2) a+=1; (3) *p=*p+1; (4) *p++;

Q.69 Which of the following best describes a collision domain
(1) a network area that is bounced by bridges, routers or switches
(2) a network area within which data packets that have collided are propogated
(3) a network area where routers and hubs are installed
(4) a network area where filters are applied

Q.70 Which networking device can solve the problem of excessive broadcast traffic
(1) a bridge (2) a router (3) a hub (4) a filter

Q.71 If a class C network is subnetted with a mask of 255.255.255.192, how many usable subnets are created
(1) 2 (2) 6 (3) 14 (4) 30

Q.72 Given an IP host address of 192.168.5.121 and a subnet mask of 255.255.255.248, what is the network number of the host
(1) 192.168.5.12 (2) 192.169.5.121 (3) 192.169.5.120 (4) 192.168.5.120

Q.73 At which layers of the OSI reference model does a WAN operate
(1) physical and application
(2) physical and data link layer
(3) data link layer and network layer
(4) data link layer and presentation layer

Q.74 What is another name for 10 base 5 cabling
(1) two ethernet (2) telephone wiring (3) thin ethernet (4) coaxial ethernet

Q.75 The sequence of page addresses generated by a program is 7, 0, 1, 2, 0, 3, 0, 4, 2 and 3. This program is to be executed on a system with main memory size of 3 pages. If first in first out (FIFO) page repalcement algorithm is used, then how many number of page faults occur
(1) 10 (2) 9 (3) 11 (4) 12

Q.76 An operating system uses shortest remaining time (SRT) process scheduling algorithm. Consider the arrival times and execution times for the following processes

process	execution time	arrival time
P1	20	0
P2	25	15
P3	10	30
P4	15	45

What is the total waiting time for process P2
(1) 15 (2) 5 (3) 40 (4) 55

Q.77 Consider a system with logical address as 256 M words and physical address space as 512 K words ans physical space as 2K words. Then, find the number of pages
(1) 128 K (2) 120 K (3) 130 K (4) 140 K

Q.78 A critical section is a program segment
(1) which should run in a certain specified amount of time
(2) which avoids deadlocks
(3) where shared resources are accessed
(4) which must be enclosed by a pain of semaphores operation

Q.79 Which of the following memory allocation scheme suffers from external fragmentation
(1) paging (2) segmentation
(3) swapping (4) pure demand paging

Q.80 Consider a job scheduling problem with 4 jobs J1, J2, J3, J4 and corresponding deadlines (d1, d2, d3, d4) = (4, 2, 4, 2). Which of the following is not a feasible schedule without violating any job dead line
(1) J2, J4, J1, J3 (2) J4, J1, J2, J3 (3) J4, J2, J3, J1 (4) J4, J2, J1, J3

Q.81 Which of the following is correct in case of page fault and cache miss
(1) page fault is hardware fault and cache miss is software fault
(2) page fault is software fault and cache miss is hardware fault
(3) page fault and cache miss are same
(4) page fault is generated cache miss

Q.82 Which one of the following CPU scheduling algorithm leads to starvation problem
(1) FIFO (2) round robin (3) SJF (4) preemptive

Q.83 To avoid the race condition, how many number of processes that may be simultaneously running in the critical section
(1) one (2) two (3) three (4) four

Q.84 The process of 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 switching (3) thrashing (4) polling

Q.85 Which scheduling policy is most suitable for a time-shared operating system
(1) shortest-job first (2) priority-based
(3) round-robin (4) first-come-first-serve

Q.86 An operating system contains 3 user processes each requiring 2 units of resource R. The mininmum number of units of R such that no deadlocks will ever arise is
(1) 4 (2) 3 (3) 5 (4) 6

Q.87 CPU burst time indicates the time, the process needs the CPU. The following are the set of processes with their respective CPU burst time (in milliseconds)

processes	CPU-burst time
P1	10
P2	5
P3	5

What is the average waiting time if the process arrived in the following order : P2, P3 & P1
(1) 5 (2) 4 (3) 20 (4) 10

Q.88 Program 'preemption' is
(1) forced de allocation of the CPU from a program which is executing on the CPU
(2) release of CPU by the program after completing its task
(3) forced allotment of CPU by a program to itself
(4) a program terminating itself due to delection of an error

Q.89 In which of the following page replacement policies belady's anomaly occurs
(1) FIFO (2) LRU (3) LFU (4) MRU

Q.90 The metadata is created by the
(1) DML compiler (2) DML pre-processor
(3) DDL interpreter (4) query interpreter

Q.91 When an E-R diagram is mapped to tables, the representation is redundant for
(1) weak entity sets (2) weak relationship sets
(3) strong entity sets (4) strong relationship sets

Q.92 The keyword to eliminate duplicate rows from the query result in SQL is
(1) DISTINCT (2) NO DUPLICATE (3) UNIQUE (4) NONREDUNDANT

Q.93 Relational algebra is
(1) data definition language (2) meta language
(3) procedural query language (4) declarative language

Q.94 A functional dependency of the form $x \rightarrow y$ is trivial if
(1) $y \subseteq x$ (2) $y \subset x$ (3) $x \subseteq y$ (4) $x \subset y$

Q.95 Relations produced from an E-R model will always be in which form
(1) first normal form (2) second normal form
(3) third normal form (4) fourth normal form

Q.96 Relationships among relationship can be represented in an E-R model using _____
(1) aggregation (2) association
(3) weak entity sets (4) weak relationship sets

Q.97 Which of the following operator cannot be overloaded
(1) ?: (2) ++ (3) [] (4) ==

Q.98 Which function can operate an object on two different classes, and also acts as a bridge between two different classes
(1) virtual function (2) member function
(3) friend function (4) inline function

Q.99 Which type of constructor initialize the values from an existing object of a class to new instantiated object of the same class
(1) default constructor (2) parameterized constructor
(3) copy constructor (4) duplicate constructor

Q.100 The object in C++ can be de-initialized by using a function termed as
(1) destructor (2) constructor (3) calloc () (4) malloc ()

Key

(1) 2	(2) 2	(3) 2	(4) 4
(5) 1	(6) 1	(7) 1	(8) 1
(9) 1	(10) 4	(11) 4	(12)
(13) 2	(14) 4	(15)	(16) 4
(17) 4	(18) 3	(19) 2	(20) 3
(21) 2	(22) 3	(23) 2	(24) 2
(25) 2	(26) 2	(27) 1	(28) 3
(29) 1	(30) 3	(31) 1	(32) 1
(33) 1	(34) 4	(35) 4	(36) 4
(37) 1	(38) 2	(39) 4	(40) 3
(41) 1	(42) 1	(43) 2	(44) 2
(45) 3	(46) 1	(47) 4	(48) 3
(49) 3	(50) 4	(51) 4	(52) 1
(53) 3	(54) 1	(55) 2	(56) 2
(57) 4	(58) 4	(59) 2	(60) 4
(61) 3.	(62)	(63) 2	(64) 1
(65) 4	(66) 3	(67) 2	(68) 4
(69) 2	(70) 2	(71) 1	(72) 1
(73) 2	(74) 3	(75) 2	(76) 1
(77) 1	(78) 3	(79) 2	(80) 1
(81) 1	(82) 3	(83) 1	(84)
(85) 3	(86) 1	(87) 1	(88) 1
(89) 1	(90) 3	(91) 2	(92) 1
(93) 3	(94) 1	(95) 1	(96) 1
(97) 3	(98)	(99)	(100)