

**PROVISIONAL ANSWER KEY**

Question Paper Code: 144/2013  
Exam: HSST  
Medium of Question: English  
Date of Test 29-08-2014  
Alphacode A

Question1:-In a BST, the traversal type which would print the values in the nodes in sorted order is :-

- A:-Preorder
- B:-Inorder
- C:-Postorder
- D:-None of the above

Correct Answer:- Option-B

Question2:-The contrapositive of the statement, "You win the game if you know the rules but are not overconfident" is :

- A:-If you lose the game then you don't know the rules or you are overconfident.
- B:-If you know the rules and are overconfident then you win the game.
- C:-A necessary condition that you know the rules or you are not overconfident is that you win the game.
- D:-If you don't know the rules or are overconfident you lose the game.

Correct Answer:- Option-A

Question3:-If  $L_1$  be the class of languages accepted by finite state machines and  $L_2$  be the class of languages represented by regular expressions then,

- A:- $L_1 \cap L_2 = \Phi$
- B:- $L_2 \subseteq L_1$
- C:- $L_1 \subset L_2$
- D:- $L_1 = L_2$

Correct Answer:- Option-D

Question4:-In which one of the following models can requirements be redefined

- A:-Spiral Model
- B:-Prototyping Model
- C:-Waterfall Model
- D:-Evolutionary Model

Correct Answer:- Option-B

Question5:-The method adopted by the memory management module of an OS of a computer to periodically collect all the free memory space to form contiguous block of free space is called

- A:-Dynamic Memory Allocation
- B:-Garbage Collection
- C:-Concatenation
- D:-Collision

Correct Answer:- Option-B

Question6:-Among the following statements about binary trees which one is NOT true ?

- A:-Every non-empty tree has exactly one root node.
- B:-Every non-root node has exactly one parent.
- C:-Every binary tree has at least one node.
- D:-Every node has at most two children.

Correct Answer:- Option-C

Question7:-DRAM is used as main memory in a computer system because it

- A:-needs refreshing circuitary
- B:-consumes less power
- C:-has higher speed
- D:-has lower cell density

Correct Answer:- Option-C

Question8:-8251 is a

- A:-UART
- B:-USART
- C:-Programmable interval timer/counter
- D:-Programmable Interrupt Controller

Correct Answer:- Option-B

Question9:-A public key encryption system

- A:-Allows only the correct receiver to decode the data
- B:-Does not encode the data before transmitting it
- C:-Allows only the correct sender to decode the data
- D:-Allows only one to decode the transmission

Correct Answer:- Option-A

Question10:-Environment variables can be accessed by

- A:-System programs
- B:-C programs
- C:-Shell scripts
- D:-All of these

Correct Answer:- Option-D

Question11:-DML is used for

- A:-Addition of new structures in the database system
- B:-Manipulation and processing of database
- C:-Definition of physical structure of database system
- D:-Description of logical structure of database

Correct Answer:- Option-B

Question12:-Suppose that  $N = \{1, 2, 3, \dots\}$  be ordered by divisibility, which one of the following subset is totally ordered?

- A:- $\{2, 6, 24\}$
- B:- $\{4, 15, 30\}$
- C:- $\{3, 5, 15\}$
- D:- $\{2, 9, 16\}$

Correct Answer:- Option-A

Question13:-Which among the following searching technique takes  $O(1)$  time to locate a data ?

- A:-Binary Search
- B:-Tree Search
- C:-Hashing
- D:-Linear Search

Correct Answer:- Option-C

Question14:-The cause for poor response time is

- A:-High I/O rates
- B:-High paging rates
- C:-Process busy

D:-Any of the above

Correct Answer:- Option-D

Question15:-Which among the following statements is false ?

- A:-The data dictionary contains the name and description of each data element
- B:-Data elements in the database can be modified by changing the data dictionary
- C:-The data dictionary is a tool used exclusively by the database administrator
- D:-Database administrator normally maintains the data dictionary

Correct Answer:- Option-B

Question16:-The infix expression for the postfix expression  $x \ 12 + z \ 17 y + 42 * / +$  is :-

- A:- $x + 12 + z / 17 + y * 42$
- B:- $x + 12 + z / (17 + y) * 42$
- C:- $(x + 12 + z) / (17 + y * 42)$
- D:- $x + 12 + z / ((17 + y) * 42)$

Correct Answer:- Option-D

Question17:-The basic types of programmable arrays are made of \_\_\_\_\_

- A:-AND gates
- B:-AND gates and OR gates
- C:-OR gates
- D:-NAND and NOR gates

Correct Answer:- Option-B

Question18:-A COCOMO model is

- A:-Complete Cost Estimation Model
- B:-Constructive Cost Estimation Model
- C:-Common Cost Estimation Model
- D:-Comprehensive Cost Estimation Model

Correct Answer:- Option-B

Question19:-The interval between the time of submission and completion of a job is called as \_\_\_\_\_

- A:-Turnaround time
- B:-Waiting time
- C:-Response time
- D:-Throughput

Correct Answer:- Option-A

Question20:-An assembler is

- A:-data dependent
- B:-programming language dependent
- C:-machine dependent
- D:-syntax dependent

Correct Answer:- Option-C

Question21:-The expansion of nested macro calls follows \_\_\_\_\_ rule

- A:-LIFO
- B:-LIFO
- C:-FIFO
- D:-priority

Correct Answer:- Option-B

Question22:-Von Neumann architecture is

- A:-SISD
- B:-SIMD
- C:-MIMD
- D:-MISD

Correct Answer:- Option-A

Question23:-The device that is used to forward data packets from one network to another is called a \_\_\_\_\_

- A:-Bridge
- B:-Hub
- C:-Switch
- D:-Gateway

Correct Answer:- Option-C

Question24:-Which among the following is the most general phrase structured grammar ?

- A:-Context - Sensitive
- B:-Context - Free
- C:-Regular
- D:-None of the above

Correct Answer:- Option-A

Question25:-When the following instructions have been executed, what will be the contents of register AL ?

MOV BL, 8C

MOV AL, 7E

ADD AL, BL

- A:-0A and carry flag is reset
- B:-0A and carry flag is set
- C:-6A and carry flag is reset
- D:-6A and carry flag is set

Correct Answer:- Option-B

Question26:-The first modern computer was called \_\_\_\_\_

- A:-UNIVAC-I
- B:-FLOW-MATIC
- C:-ENIAC
- D:-INTEL

Correct Answer:- Option-C

Question27:-In which of the language paradigms is the addition of two values expressed as  $(+ \ 10 \ 20)$ ?

- A:-procedural
- B:-functional
- C:-logic
- D:-object-oriented

Correct Answer:- Option-C

Question28:-What is the purpose of this bit of code

```
void init()
```

```
{
```

```
...
```

```
}
```

- A:-A place to declare variables
- B:-A required method in an applet

- C:-A class that initializes the applet  
D:-Interacting with the user  
Correct Answer:- Option-B
- Question29:-In Relational Algebra the query that finds customers who have a balance of over 800 is  
A:- $\sigma_{customer\_name(\sigma_{balance > 800}(\text{Deposit}))}$   
B:- $\sigma_{customer\_name(\sigma_{balance > 800}(\text{Deposit}))}$   
C:- $\sigma_{customer\_name(\sigma_{balance > 800}(\text{Borrow}))}$   
D:- $\sigma_{customer\_name(\sigma_{balance > 500}(\text{Borrow}))}$   
Correct Answer:- Option-A
- Question30:-Secret-key encryption is also known as  
A:-Secret-encryption  
B:-Asymmetric encryption  
C:-Symmetric encryption  
D:-Private encryption  
Correct Answer:- Option-D
- Question31:-DNS is a  
A:-Distributed hierarchical naming system  
B:-Vertical naming system  
C:-Horizontal naming system  
D:-Client Server system  
Correct Answer:- Option-C
- Question32:-E-commerce is not suitable for  
A:-Online job searching  
B:-Sale/Purchase of expensive jewellery and antiques  
C:-Sale/Purchase of branded clothes  
D:-Sale/Purchase of mobile phones  
Correct Answer:- Option-A
- Question33:-Several factors exist that affect the efficiency of lookup operations in a hash table. Which among the following is NOT one of those factors ?  
A:-Size of elements stored in the hash table.  
B:-Number of elements stored in the hash table.  
C:-Quality of the hash function.  
D:-Number of buckets in the hash table.  
Correct Answer:- Option-A
- Question34:-A DBMS query language is designed to  
A:-specify the structure of a database  
B:-support end users with English-like commands  
C:-support the development of complex applications software  
D:-all of the above  
Correct Answer:- Option-D
- Question35:-Let  $r$  be a resource. There are 3 user processes each requiring 2 units of  $R$ . Then the minimum number of units of  $R$  such that no deadlocks will occur is  
A:-4  
B:-3  
C:-5  
D:-6  
Correct Answer:- Option-A
- Question36:-Assume a cache memory with associative mapping. If the main memory is of 8K bytes and the cache memory is of 2K words, then each word of cache memory is  
A:-21 bits  
B:-11 bits  
C:-16 bits  
D:-20 bits  
Correct Answer:- Option-C
- Question37:-Which of the following is true ?  
A:-Stream cipher technique is an encryption technique  
B:-Block cipher technique is an encryption technique  
C:-Both (A) and (B)  
D:-Neither of (A) and (B)  
Correct Answer:- Option-C
- Question38:-Given a linked list with  $n$  elements. Then the time taken to insert an element after an element pointed to by some pointer is  
A:- $O(n \log_2 n)$   
B:- $O(1)$   
C:- $O(\log_2 n)$   
D:- $O(n)$   
Correct Answer:- Option-B
- Question39:-Let  $h$  be a hashing function and is used to hash  $n$  keys into a table of size  $m$  (given  $n \leq m$ ). Then the expected number of collisions involving a particular key  $x$  is  
A:-less than 1  
B:-less than  $m$   
C:-less than  $n$   
D:-less than  $n/2$   
Correct Answer:- Option-A
- Question40:-If  $L$  is a lattice, then for every  $a$  and  $b$  in  $L$  which among the following is correct?  
A:- $a \vee (b \wedge c) = a$   
B:- $a \vee (b \vee c) = (a \vee b) \vee c$   
C:- $a \vee b = a \wedge b$   
D:- $a \vee (b \vee c) = b$   
Correct Answer:- Option-B
- Question41:-In the spiral model 'risk analysis' is performed  
A:-in every loop  
B:-in the first and second loop  
C:-before using spiral model  
D:-in the first loop  
Correct Answer:- Option-A
- Question42:-The technique of improving the priority of process waiting in queue for CPU allocation is called \_\_\_\_\_  
A:-Starvation  
B:-Ageing  
C:-Revocation  
D:-Relocation  
Correct Answer:- Option-B
- Question43:-PSW is saved in stack when there is a  
A:-interrupt recognized

B:-execution of CALL instruction

C:-execution of RST instruction

D:-all of these

Correct Answer:- Option-A

Question44:-The default subnet mask for a Class C network is

A:-127.0.0.1

B:-255.0.0.0

C:-255.255.0.0

D:-255.255.255.0

Correct Answer:- Option-D

Question45:-Which one of the following is NOT an advantage of Distributed System?

A:-Reliability

B:-Incremental growth

C:-Resource sharing

D:-None of the above

Correct Answer:- Option-A

Question46:-Cache memory is based

A:-on the property of locality of reference

B:-on the fact that references generally tend to cluster

C:-on the heuristic 90-10 rule

D:-all of the above

Correct Answer:- Option-A

Question47:-The language component of DBMS which can be embedded in a program is

A:-the database administrator (DBA)

B:-the data manipulation language (DML)

C:-the data definition language (DDL)

D:-a query language

Correct Answer:- Option-B

Question48:-A computer system that permits multiple users to run programs at same time is \_\_\_\_\_

A:-Real time system

B:-Time sharing system

C:-Multiprogramming system

D:-Multi tasking system

Correct Answer:- Option-D

Question49:-What is the output of the following code segment?

```
void test()
```

```
{
```

```
char c;
```

```
cin.get(c);
```

```
if (c!='\n'){
```

```
test();
```

```
cout.put(c);
```

```
}}
```

A:-It will print an empty line

B:-The string entered is printed as it is

C:-It will go into an infinite loop

D:-The string entered is printed in reverse order

Correct Answer:- Option-D

Question50:-Which of the following statement is the negation of the statement, "10 is even and -5 is negative"

A:-10 is even and -5 is not negative

B:-10 is odd and -5 is not negative

C:-10 is even or -5 is not negative

D:-10 is odd or -5 is not negative

Correct Answer:- Option-D

Question51:-The \_\_\_\_\_ sort relatively passes through a list to exchange the first element with any element less than it and then repeats with a new first element

A:-selection sort

B:-quick sort

C:-insertion sort

D:-heap sort

Correct Answer:- Option-B

Question52:-Which among the following is the data structure that is used to check balanced parenthesis in an expression

A:-Stack

B:-Tree

C:-Queue

D:-Array

Correct Answer:- Option-A

Question53:- $p \rightarrow q$  is logically equivalent to

A:- $\neg q \rightarrow p$

B:- $\neg p \vee q$

C:- $\neg p \wedge q$

D:- $\neg p \rightarrow q$

Correct Answer:- Option-B

Question54:-Which of the following regular expression over  $\{0,1\}$  denotes the set of all strings not containing 100 as substring?

A:- $0^*1^*01^*$

B:- $0^*1010^*$

C:- $0^*(1^*0)^*$

D:- $0^*(10+1)^*$

Correct Answer:- Option-D

Question55:-Which one of the following is NOT a size metric?

A:-Cyclomatic complexity

B:-Function count

C:-LOC

D:-Program Length

Correct Answer:- Option-A

Question56:-How many times is the symbol '&' printed by the call sample(4)?

```
void sample(int i){
```

```
if(i>1){
```

```
    sample(i/2);
```

```
    sample(i/2);
```

```
    }
```

```
cout<<"&";
```

- }  
A:-3  
B:-4  
C:-7  
D:-8  
Correct Answer:- Option-C
- Question57:-The scheduling policy that is most suitable for a time-shared operating system is :  
A:-SJF  
B:-Elevator  
C:-Round Robin  
D:-FCFS  
Correct Answer:- Option-C
- Question58:-If a node in a BST has two children, then its inorder predecessor has  
A:-no child  
B:-no left child  
C:-no right child  
D:-two children  
Correct Answer:- Option-C
- Question59:-The maximum number of processes that may be simultaneously inside the critical section in order to avoid race condition is  
A:-one  
B:-zero  
C:-more than two  
D:-two  
Correct Answer:- Option-A
- Question60:-The time required by a sector to reach below read/write head is called as \_\_\_\_\_  
A:-Seek time  
B:-Access time  
C:-Latency time  
D:-None  
Correct Answer:- Option-C
- Question61:-Which one of the following TCP/IP protocol is used for transferring e-mail messages from one machine to another?  
A:-RPC  
B:-FTP  
C:-SMTP  
D:-RTP  
Correct Answer:- Option-C
- Question62:-Among the following, which one is used to connect two systems, specifically if the systems use different protocols.  
A:-hub  
B:-bridge  
C:-gateway  
D:-repeater  
Correct Answer:- Option-C
- Question63:-The disadvantage of a pipe is that  
A:-It is a one way communication channel  
B:-It dies along with the process that created it  
C:-It cannot be shared by unrelated processes  
D:-All of the above  
Correct Answer:- Option-D
- Question64:-a subschema expresses  
A:-the physical view  
B:-the logical view  
C:-the external view  
D:-all of the above  
Correct Answer:- Option-C
- Question65:-Given that modules X and Y operate on the same input and output data, then the cohesion is  
A:-Procedural  
B:-Communicational  
C:-Logical  
D:-Sequential  
Correct Answer:- Option-B
- Question66:-Which among the following sorting methods is the most suitable one for sorting a list which is almost sorted  
A:-Bubble Sort  
B:-Quick sort  
C:-Selection sort  
D:-Insertion sort  
Correct Answer:- Option-A
- Question67:-\_\_\_\_\_ is the scheduler which selects processes from secondary storage for scheduling  
A:-Process scheduler  
B:-Short term scheduler  
C:-Medium term scheduler  
D:-Long term scheduler  
Correct Answer:- Option-C
- Question68:-Among the following which one is NOT a weighted code?  
A:-Binary number system  
B:-Excess 3 code  
C:-Decimal number system  
D:-None of these  
Correct Answer:- Option-B
- Question69:-LDAP stands for  
A:-Large Directory Access Protocol  
B:-Lightweight Directory Access Protocol  
C:-Large Data Access Protocol  
D:-Lightweight Data Access Protocol  
Correct Answer:- Option-B
- Question70:-EPROM is erased by using  
A:-Ultraviolet rays  
B:-24 V electric pulse  
C:-12 V electric pulse  
D:-infrared rays

Correct Answer:- Option-A

Question71:-The language that has recently become the defacto standard for interfacing application programs with relational database system is

- A:-4GL
- B:-SQL
- C:-DBase
- D:-Oracle

Correct Answer:- Option-B

Question72:-A translator which performs macro expansion is called as \_\_\_\_\_

- A:-Micro pre-processor
- B:-Macro processor
- C:-Assembler
- D:-Macro pre-processor

Correct Answer:- Option-D

Question73:-The term 'page traffic' refers to

- A:-the movement of pages in and out of memory
- B:-number of pages of executing programs loaded in memory
- C:-number of pages in memory at a given instant
- D:-number of pages required to be brought in at a given page request

Correct Answer:- Option-A

Question74:-The term 'page traffic' refers to

- A:-the movement of pages in and out of memory
- B:-number of pages of executing programs loaded in memory
- C:-number of pages in memory at a given instant
- D:-number of pages required to be brought in at a given page request

Correct Answer:- Option-A

Question75:-The running time of the following fragment of code is :

```
for (int i=0;i<20;i++)
for(int j=0;j<N;j++)
for (int k=N-2;k<N+2;k++)
    cout<<i<<" "<<j<<endl;
```

- A:-O(N log N)
- B:-O(log N)
- C:-O(N<sup>2</sup>)
- D:-O(N)

Correct Answer:- Option-D

Question76:-Which one of the following proposition is a tautology?

- A:-p→(p→q)
- B:-p∨(q→p)
- C:-p∨(p→q)
- D:-(p∨q)→p

Correct Answer:- Option-C

Question77:-Relocatable programs

- A:-do not need a linker
- B:-can be loaded almost anywhere in memory
- C:-can be loaded only at one specific location
- D:-cannot be used with fixed partitions

Correct Answer:- Option-B

Question78:-In the write operation of DMA, the data is transferred

- A:-from I/O to memory
- B:-from memory to memory
- C:-from memory to I/O
- D:-from I/O to I/O

Correct Answer:- Option-A

Question79:-Which of the following language paradigms allows the programmer to express algorithms derived from a top-down design?

- A:-logic
- B:-functional
- C:-object-oriented
- D:-procedural

Correct Answer:- Option-D

Question80:-The following is an example of bool-expression.

- A:-x=6
- B:-m1.setText("Hello")
- C:-cause=bYes
- D:-70

Correct Answer:- Option-C

Question81:-If every requirement can be checked by a cost-effective process, then the SRS is said to be

- A:-verifiable
- B:-complete
- C:-traceable
- D:-modifiable

Correct Answer:- Option-A

Question82:-In order to sort a list L consisting of a sorted list followed by a few "random" elements, which one of the following sorting methods would be suitable?

- A:-Quick sort
- B:-Selection sort
- C:-Bubble sort
- D:-Insertion sort

Correct Answer:- Option-D

Question83:-SIMD organization represents

- A:-organization of single computer containing a control unit, processor unit and a memory unit
- B:-one that includes many processing units under the supervision of a common control unit
- C:-a computer system capable of processing several programs at the same time
- D:-none of the above

Correct Answer:- Option-B

Question84:-The view of total database content is

- A:-External view
- B:-Physical view
- C:-Internal view
- D:-Conceptual view

Correct Answer:- Option-D

Question85:-Quick sort algorithm belongs to the \_\_\_\_\_ design technique.

- A:-Backtracking
  - B:-Dynamic programming
  - C:-Greedy
  - D:-Divide and Conquer
- Correct Answer:- Option-C

Question86:-Among the following, which one is NOT a regular expression?

- A:- $(1+2+0)^*(1+2)$
  - B:- $[(0+1)-(0b+a1)^*(a+b)]^*$
  - C:- $[(a+b)^*(aa+bb)]^*$
  - D:- $(01+11+10)^*$
- Correct Answer:- Option-B

Question87:-Given a 4-input AND gate, how many inputs must be HIGH in order for the output of the logic gate to go HIGH?

- A:-any two of the inputs
  - B:-any one of the inputs
  - C:-any three of the inputs
  - D:-all four inputs
- Correct Answer:- Option-D

Question88:-Let P be the risk probability, L be the loss, then Risk Exposure(RE) is computed as

- A:- $RE=P+L$
  - B:- $RE=P/L$
  - C:- $RE=P*L$
  - D:- $RE=2*P*L$
- Correct Answer:- Option-C

Question89:-Virtual memory is

- A:-less efficient in utilization of memory
  - B:-used in all major commercial operating systems
  - C:-simple to implement
  - D:-useful when fast I/O devices are not available
- Correct Answer:- Option-B

Question90:-If we are to debug an implementation of a quicksort that is supposed to sort an array in ascending order, after the first partition step has been completed, the contents of the array are in  
2 10 1 14 17 24 22 20

- A:-The pivot could have been either 14 or 17
  - B:-Neither 14 nor 17 could have been the pivot
  - C:-The pivot could have been 17, but could not have been 14
  - D:-The pivot could have been 14, but could not have been 17
- Correct Answer:- Option-A

Question91:-An n-bit microprocessor has

- A:-n-bit program counter
  - B:-n-bit ALU
  - C:-n-bit address register
  - D:-n-bit instruction register
- Correct Answer:- Option-D

Question92:-Which one of the following is NOT a scripting language?

- A:-Javascript
  - B:-HTML
  - C:-Postscript
  - D:-XML
- Correct Answer:- Option-C

Question93:-Which one of the language paradigms express the addition of two values as (+10 20)?

- A:-procedural
  - B:-object-oriented
  - C:-logic
  - D:-functional
- Correct Answer:- Option-D

Question94:-In the spiral model 'risk analysis' is performed

- A:-before using spiral model
  - B:-in the first and second loop
  - C:-in every loop
  - D:-in the first loop
- Correct Answer:- Option-C

Question95:-Merging four sorted files containing 50, 10, 25 and 15 records respectively takes \_\_\_\_\_ time

- A:- $O(200)$
  - B:- $O(175)$
  - C:- $O(125)$
  - D:- $O(100)$
- Correct Answer:- Option-D

Question96:-Which one of the following is NOT a fundamental process state?

- A:-blocked
  - B:-ready
  - C:-terminated
  - D:-executing
- Correct Answer:- Option-A

Question97:-The circuit that is used to store one bit of data is

- A:-Decoder
  - B:-Register
  - C:-Encoder
  - D:-Flip Flop
- Correct Answer:- Option-D

Question98:-Average time required to reach a storage location in memory and read its contents is

- A:-turnaround time
  - B:-transfer time
  - C:-seek time
  - D:-access time
- Correct Answer:- Option-D

Question99:-Using Bubble sort, the number of interchanges required to sort 5, 1, 6, 2 and 4 in ascending order is

- A:-7
- B:-5
- C:-8

D:-6

Correct Answer:- Option-B

Question100:-SRD atands for

A:-Software Requirements Definition

B:-Structred Requirements Diagram

C:-Software Requirements Diagram

D:-Structured Requirements Definition

Correct Answer:- Option-D