1. A technique for direct search is
   a) Binary Search
   b) Linear Search
   c) Tree Search
   d) Hashing

2. Consider a hash table of size seven, with starting index zero, and a hash function (3x + 4)mod7. Assuming the hash table is initially empty, which of the following is the contents of the table when the sequence 1, 3, 8, 10 is inserted into the table using closed hashing? Note that '_' denotes an empty location in the table.
   a) 8, _, _, _, _, _, 10
   b) 1, 8, 10, _, _, _, 3
   c) 1, _, _, _, _, _,3
   d) 1, 10, 8, _, _, _, 3

3. Key value pairs is usually seen in
   a) Hash tables
   b) Heaps
   c) Both Hash tables and Heaps
   d) Skip list

4. The keys 12, 18, 13, 2, 3, 23, 5 and 15 are inserted into an initially empty hash table of length 10 using open addressing with hash function h(k) = (k*3) mod 15 and linear probing. What is the resultant hash table?

Index:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
a.	15	5	-	-	-	-	12	2	13	18	3	23	-	-	-	-
b.	**5**	**15**	**-**	**-**	**-**	**-**	**12**	**2**	**13**	**18**	**3**	**23**	**-**	**-**	**-**	**-**
c.	5	15	-	-	-	-	18	12	2	13	3	23	-	-	-	-

   d. None of the above

5. Consider a 13 element hash table for which f(key)=key mod 13 is used with integer keys. Assuming linear probing is used for collision resolution, at which location would the key 103 be inserted, if the keys 661, 182, 24 and 103 are inserted in that order?

   a. 0 b. 1 c. 11 **d. 12**

6. Following code snippet is the function to insert a string in a trie. The missing line is…

```
void insert(String str)
  {
     TrieNode node = root;
     for (int i = 0; i < length; i++)
     {
        int index = key.charAt(i) - 'a';
        if (node.children[index] == null)
           node.children[index] = new TrieNode();
        _____________________________
     }
      node.isEndOfWord = true;    }
```

a) node = node.children[index];

b) node = node.children[str.charAt(i + 1)];

c) node = node.children[index++];

d) node = node.children[index++];

7. Auto complete and spell checkers can be implemented efficiently using the trie.

a) True

b) False

8. Trie is also known as _____

a) Digital Tree

b) Treap

c) Binomial Tree

d) 2-3 Tree

9. Fill in the missing line during the creation of a node in a TRIE Tree that initializes the address field to NULL and endofword to 0.

```
struct trienode *getnode()
{
 int i;
 struct trienode *temp;
  temp=(struct trienode*)(malloc(sizeof(struct trienode)));
  for(i=0;i<26;i++)
                                  // Initialize all the fields to NULL.
                                 // Initialize endofword to 0.
  return temp;
}
```

a. **temp->child[i]=NULL;**
temp->endofword=0;

b. temp->child[i]=NULL;

c. temp->child[i]=NULL;
temp->endofword=0;

d. None of the above