

Lab prog - 9 a) Write a program to traverse a graph using BFS method.

Code :

```
# include <stdio.h>
int graph [20] [20], visited [20], n;

void BFS (int start) {
    int queue [20], front = 0, rear = 0;
    visited [start] = 1;
    queue [rear ++] = start;
    while (front < rear) {
        int node = queue [front++];
        printf ("%d", node);
        for (int i=0; i < n; i++) {
            if (graph [node] [i] == 1 && !visited [i]) {
                visited [i] = 1;
                queue [rear ++] = i;
            }
        }
    }
}

int main () {
    int start;
    printf ("Enter number of vertices : ");
    scanf ("%d", &n);
}
```

```

printf ("Enter adjacency matrix : \n");
for (int i = 0; i < n; i++)
    for (int j = 0; j < n; j++)
        scanf ("%d", &graph[i][j]);
for (int i = 0; i < n; i++)
    visited[i] = 0;
printf ("Enter starting vertex : ");
scanf ("%d", &start);
BFS (start);
return 0;

```

Output :

Enter number of vertices : 3

Enter adjacency matrix :

```

0 1 1
1 0 0
1 1 0

```

Enter starting vertex : 0

BFS Traversal : 0 1 2