BFS:

```c
#include <stdio.h>

int a[20][20], q[20], visited[20], n, i, j, f = 0, r = -1;

void bfs(int v)
{
    for (i = 1; i <= n; i++)
    {
        if (a[v][i] && !visited[i])
            q[++r] = i;
    }

    if (f <= r)
    {
        visited[q[f]] = 1;
        bfs(q[f++]);
    }
}

int main()
{
    int v;

    printf("Enter the number of vertices: ");
    scanf("%d", &n);
    for (i = 1; i <= n; i++)
    {
        q[i] = 0;
        visited[i] = 0;
    }

    printf("Enter graph in matrix form:\n");
    for (i = 1; i <= n; i++)
        for (j = 1; j <= n; j++)
            scanf("%d", &a[i][j]);

    printf("Enter the starting vertex:");
    scanf("%d", &v);

    bfs(v);
    printf("\nThe node which are reachable are: ");
    for (i = 1; i <= n; i++)
    {
```

```
        if (visited[i])
            printf("%d\t", i);
    }
}
```

OUTPUT:

```
User@PRATHIKSHA /c/ada lab
$ cd "/c/ada lab/" && gcc bfs.c -o bfs && "/c/ada lab/"bfs
Enter the number of vertices: 4
Enter graph in matrix form:
0 1 1 0
0 0 0 1
0 0 0 1
0 0 0 0
Enter the starting vertex:2

The node which are reachable are: 4
User@PRATHIKSHA /c/ada lab
$ cd "/c/ada lab/" && gcc bfs.c -o bfs && "/c/ada lab/"bfs
Enter the number of vertices: 4
Enter graph in matrix form:
0 1 1 0
0 0 0 1
0 0 0 1
0 0 0 0
Enter the starting vertex:1

The node which are reachable are: 2     3       4
```