Experiment No. 3

Program Code –

```python
n = int(input("Enter the number of nodes in graph: "))
graph = {}
for i in range(n):
    key = input("Enter key for node: ")
    value = list(map(str, input("Enter values separated by space: ").split()))
    graph[key] = value
print("Graph: ", graph)
visited = []
queue = []
visited.append('0')
queue.append('0')
while queue:
    s = queue.pop(0)
    print (s, end = " ")
    for frontier in graph[s]:
        if frontier not in visited:
            visited.append(frontier)
            queue.append(frontier)
```

Output –

```
PS N:\Academics\Study Material\Degree (B.E.) in Computer Engineering\6th Sem\Artificial Intelligence (AI)\Practicals> & "C:/Program Files/Python311/p
ython.exe" "n:/Academics/Study Material/Degree (B.E.) in Computer Engineering/6th Sem/Artificial Intelligence (AI)/Practicals/Expt3/BFS.py"
Enter the number of nodes in graph: 5
Enter key for node: 0
Enter values separated by space: 1 2
Enter key for node: 1
Enter values separated by space: 0 2 3
Enter key for node: 2
Enter values separated by space: 0 1 4
Enter key for node: 3
Enter values separated by space: 1 4
Enter key for node: 4
Enter values separated by space: 2 3
Graph: {'0': ['1', '2'], '1': ['0', '2', '3'], '2': ['0', '1', '4'], '3': ['1', '4'], '4': ['2', '3']}
0 1 2 3 4
PS N:\Academics\Study Material\Degree (B.E.) in Computer Engineering\6th Sem\Artificial Intelligence (AI)\Practicals> 
```