Name:_____   **Roll No:_____**   **Section:_____**

Quiz 02

Answer:

A* Search

$$x\,v_1 \quad f(S) = 0 + (2,3,4,5,4) + 5 = 7$$
$$x_4 \quad f(A) = 1 + (3,4,3,4,3) + 5 = 8$$
$$x_4 \quad f(D) = 1 + (1,2,3,4,5) + 5 = 6$$
$$x\,v_3 \quad f(1) = 2 + (1,3,4,5) + 4 = 7$$
$$x\,v_{11} \quad f(2) = 3 + (3,4,5) + 3 = 9$$
$$x\,v_4 \quad f(E) = 3 + (1,2,3) + 4 = 8$$
$$x\,v_7 \quad f(B) = 2 + (4,5,2,3,2) + 5 = 9$$
$$x\,v_5 \quad f(3) = 4 + (1,2) + 2 = 8$$
$$x\,v_{10} \quad f(F) = 4 + (1,2,3,4) + 4 = 9$$
$$x\,v_6 \quad f(4) = 5 + (1,5) + 2 = 8$$
$$f(5) = 6 + (5) + 1 = 12$$
$$x\,v_7 \quad f(C) = 3 + (6,5,3,2,1) + 5 = 9$$
$$x\,v_8 \quad f(5) = 4 + (5,4,2,1) + 4 = 9$$
$$x\,v_9 \quad f(4) = 5 + (3,4,1) + 2 = 9$$
$$f(3) = 6 + (2,3) + 2 = 10$$
$$f(2) = 5 + (3,4,5) + 3 = 11$$
$$x\,v_{12} \quad f(F) = 6 + (2,3,4) + 3 = 9$$
$$x\,v_{13} \quad f(E) = 5 + (1,2,3) + 3 = 7$$
$$x\,v_{14} \quad f(3) = 6 + (1,2) + 2 = 8$$
$$x\,v_{15} \quad f(4) = 7 + (1) + 1 = 8$$
$$x\,v_{16} \quad f(S) = 8 + (0) + 0 = 8$$

S → D → 1 → 2 → F, E, 3 → 4 → 5

Path length = 8

Optimal = Yes

Nodes = 21