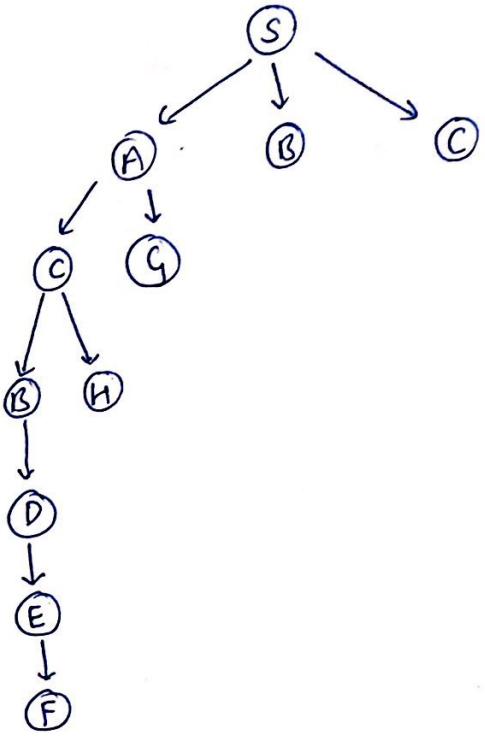
P 1)

(a) DFS - Stack

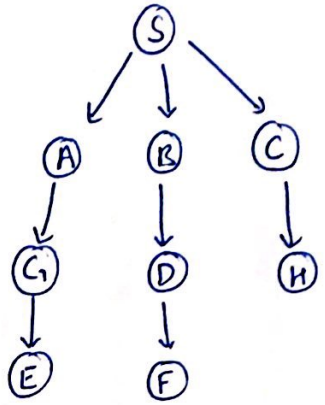
Expand Node	Frontier
	{S}
S - not goal	{A, B, C}
A - not goal	{C, G, B, C}
C - not goal	{B, H, G, B, C}
B - not goal	{D, H, G, B, C}
D - not goal	{E, F, H, G, B, C}
E - not goal	{F, H, G, B, C}
F - goal	



∴, Ans:- S - A - C - B - D - E - F -(i) Ans.

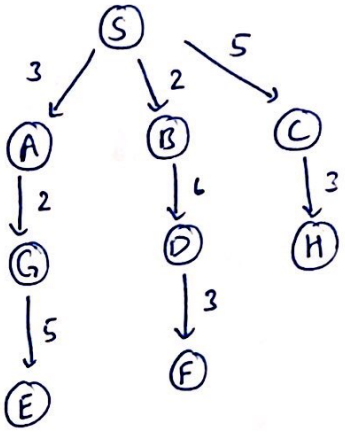
(b) BFS → Queue.

Expand Node	Frontier
	{S}
S - not goal	{A, B, C}
A - not goal	{B, C, G}
B - not goal	{C, G, D}
C - not goal	{G, D, H}
G - not goal	{D, H, E}
D - not goal	{H, E, F}
H - not goal	{E, F}
E - not goal	{F}
F - goal	



Ans:- S - B - D - F Ans. -(iii)

(c) UCS → Priority_Queue

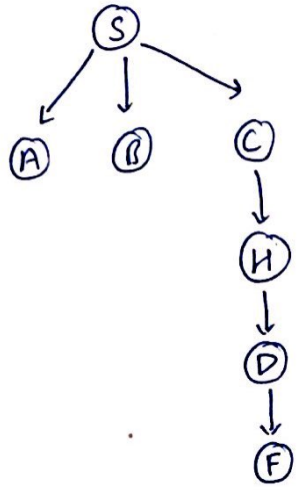


Expand Node	Frontier
	{S:0}
S - not goal	{(B,2),(A,3),(C,5)}
B - not goal	{(A,3),(C,5),(D,?)}
A - not goal	{(C,5),(G,5),(D,8)}
C - not goal	{(G,5),(D,8),(H,8)}
G - not goal	{(D,8),(H,8),(E,10)}
D - not goal	{(H,8),(E,10),(F,11)}
H - not goal	{(E,10),(F,11)}
E - not goal	{(F,11)}
F - goal.	

∴, ~~Ans~~:- S - B - D - F. — (i) ~~Ans.~~

(d) Greedy Best First Search → on basis of h(n).

Expand Node	Frontier
	{S}
S - not goal	{(C,7), (A,8), (B,9)}
C - not goal	{(H,6), (A,8), (B,9)}
H - not goal	{(D,4), (A,8), (B,9)}
D - not goal	{(F,0), (E,3), (A,8), (B,9)}
F - goal	

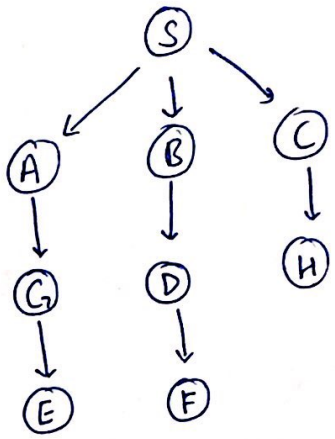


∴, Ans → S - C - H - D - F - (iv) Ans.

(e) Algorithm A → $f(n) = g(n) + h(n)$.

Nodes :- $f(n) = g(n) + h(n)$.

A	3 + 8 = 11
B	2 + 9 = 11
C	5 + 7 = 12
D	8 + 4 = 12
E	10 + 3 = 13
F	11 + 0 = 11
G	5 + 6 = 11
H	8 + 6 = 14



Expand Node	Frontier
	{S}
{S} - not goal	{(A,11), (B,11), (C,12)}
A - not goal	{(B,11), (G,11), (C,12)}
B - not goal	{(G,11), (C,12), (D,12)}
G - not goal	{(C,12), (D,12), (E,13)}
C - not goal	{(D,12), (E,13), (H,14)}
D - not goal	{(F,11), (E,13), (H,14)}
F - goal	

Ans:- S - B - D - F - (i) Ans.