Answer according to Question No. 1

Difference between informed and uninformed search are.

Informed search

(1) Given

10 kuna

7 kuna

1 kuna

Make 17 kuna in optimal way

Soln. 2 × Coins of 7 kuna

1 coin of 1 kuna

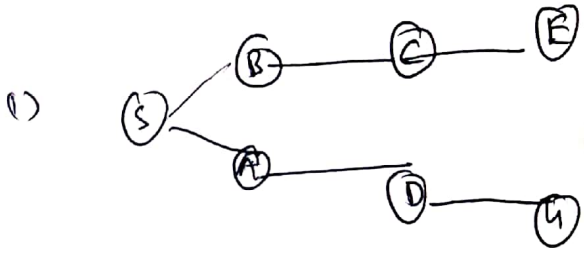
= 17 kuna.

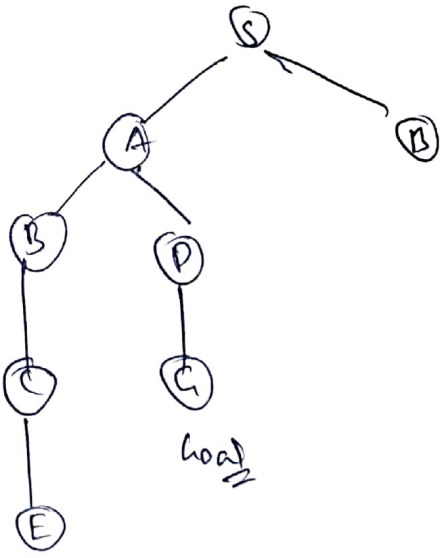
(2) Cost is low

(3) It uses knowledge for searching process

Uninformed search

(1)

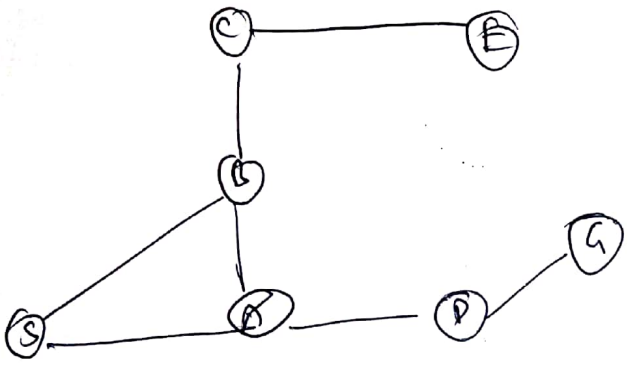




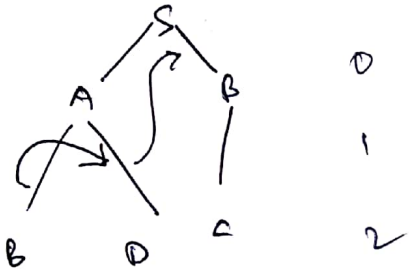
(2) cost is high.

(3) It doesn't use knowledge for searching process

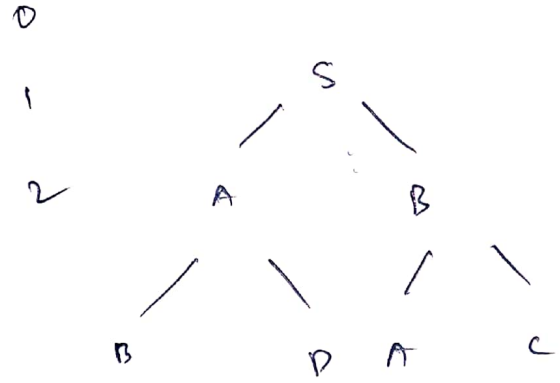
DFS (d) asks the question: is there a soln with $\leq$ d action?



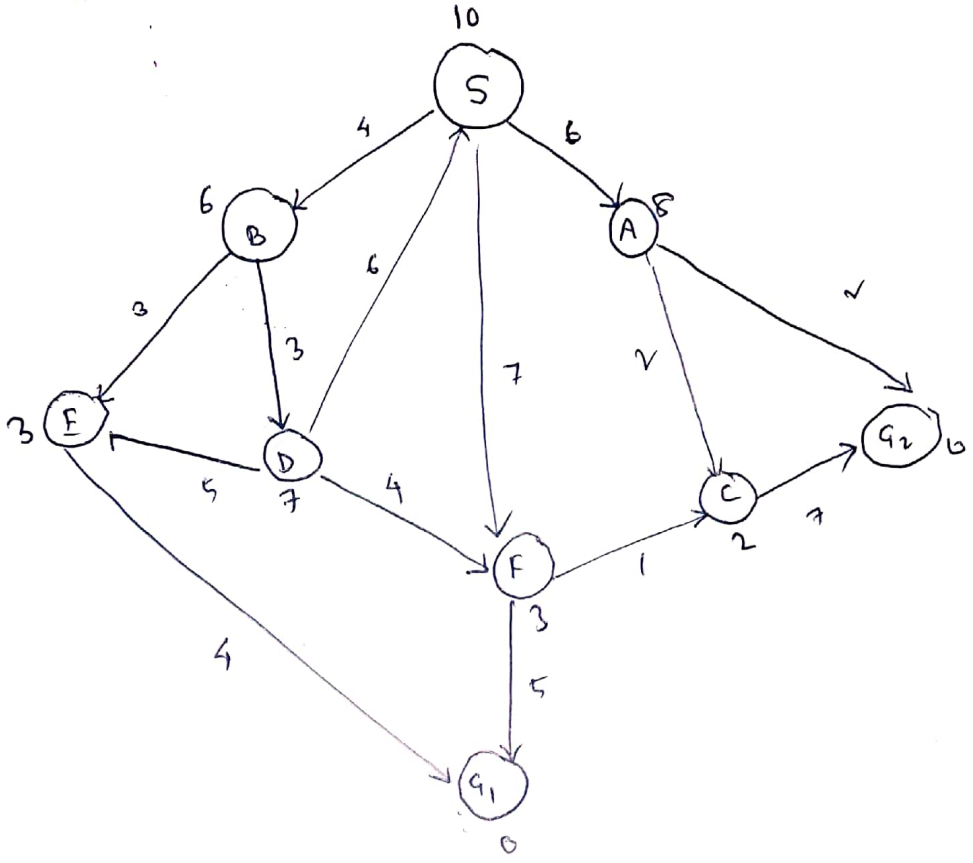
এখানে level fixed করা আছে, 2 level এর পরে আর যাবে না।



Typically BFS:



Answer according to Question no. 2



Here there are two goal states G_1 and G_2

formula $f(N) = g(N) + h(N)$

$g(N)$ = Actual cost from start node N

$h(n)$ = Estimation of cost from n to goal node

Step 1: $f(s) = 0 + 10 = (10)$

Step 2: $S \rightarrow B$; $S \rightarrow A$

$4 + 6 = (10)$ $\quad 6 + 8 = 14$

$S \rightarrow F$

$7 + 3 = (10)$

Step 3: SB → D

7 + 7 = 14

SB → E

7 + 3 = (10)

step 4: SBE → G1

11 + 0 = 11

step 5: SF → C

8 + 2 = (10)

SF → G1

12 + 0 = 12

Step 6: SFC → G2

= 15 + 0 = 15

step 7

SA → C

8 + 2 = 10

SA = G2

8 + 0 = 8

Optimal soln is

S → A → G2

Also goal node reached

S → B → E → G1

S → F → G1

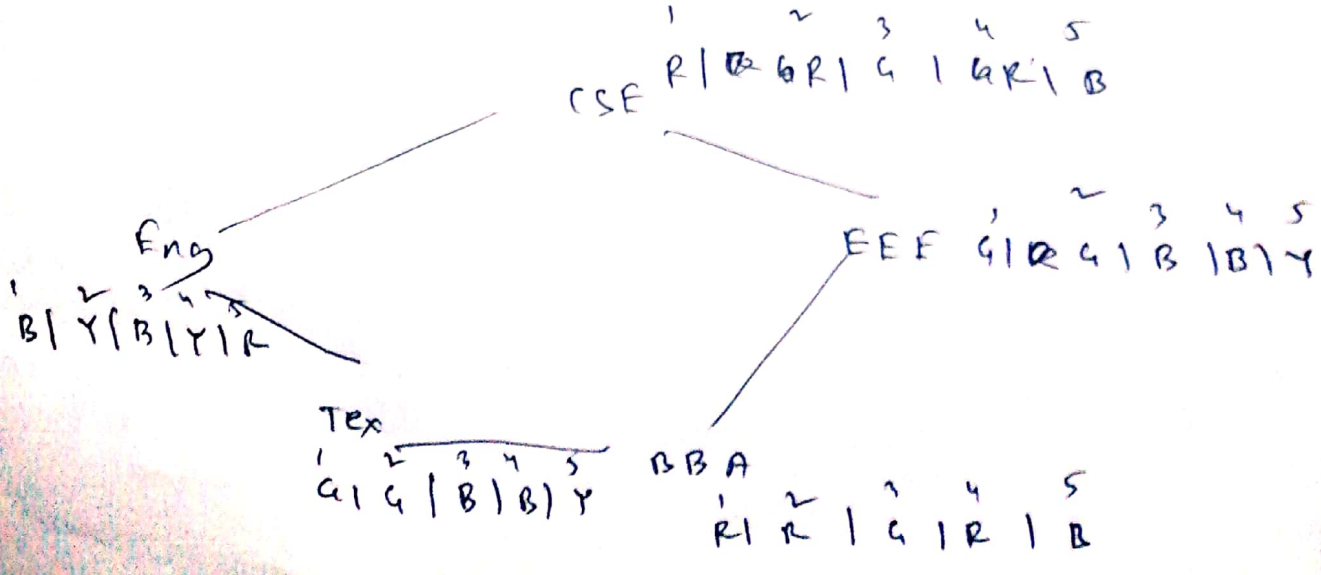
Answer according to Question No. 3

1. m - coloring decision problem

It is called as graph colouring

B. ii) Let m = {R, G, B, Y}

CSE	EEE	BBA	TEXTILE	English
R	G	R	G	B
R	G	R	G	Y
G	B	G	B	Y
R	B	R	B	Y
B	Y	B	Y	R



iii) suppose we have 6 colors

m = R, G, B, Y, P, V

CSE	EEE	BBA	TEXTILE	English
R	G	B	R	G
R	G	R	G	B
B	Y	B	Y	P
B	Y	B	P	V
B	Y	B	V	R
Y	P	Y	P	✓
Y	P	Y	P	R
Y	P	Y	P	B
Y	P	Y	P	G
Y	P	Y	V	R
P	V	P	V	B
P	V	P	V	G
P	V	P	V	Y
P	V	P		
P	V	P		

(8) 1) In M - coloring decision problem, we need to find the possibilities of assigning in different colors of each node such that no adjacent node has the same color.

In m coloring optimization problem, each node in the graph is assigned colors in such a way that minimum number of colors are used from the m given colors with no adjacent nods with same colour.