Question 1:

a)

|  |  |  |
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| Current Node | Open list | Closed list |
| - | (S,0,-) |  |
| S | (A,2,SA), (B,9,SB) | (S,0,-) |
| A | (B,6,AB), (D,9,AD), (C,8,AC) | (S,0,-), (A,2,SA) |
| B | (D,9,AD), (C,8,AC), (F,18,BF) | (S,0,-), (A,2,SA), (B,6,AB) |
| D | (C,8,AC), (F,18,BF), (E,14,DE) | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD) |
| C | (F,13,CF), (E,13,CE) | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD), (C,8,AC) |
| F | (E,13,CE), (G,18,FG) | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD), (C,8,AC), (F,13,CF) |
| E | (G,15,EG) | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD), (C,8,AC), (F,13,CF), (E,13,CE) |
| G |  | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD), (C,8,AC), (F,13,CF), (E,13,CE), (G,15,EG) |

b)

|  |  |  |
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| Current Node | Open list | Closed list |
| - | (S,0,–,11) |  |
| S | (A,2,SA,14), (B,9,SB,15) | (S,0,-) |
| A | (B,6,AB,12), (D,9,AD,14), (C,8,AC,18) | (S,0,-), (A,2,SA) |
| B | (D,9,AD,14), (C,8,AC,18), (F,18,BF,24) | (S,0,-), (A,2,SA), (B,6,AB) |
| D | (C,8,AC,18), (F,18,BF,24), (E,14,DE,21) | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD) |
| C | (F,13,CF,19), (E,13,CE,20) | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD), (C,8,AC) |
| F | (E,13,CE,20), (G,18,FG,18) | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD), (C,8,AC), (F,13,CF) |
| E | (G,15,EG,15) | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD), (C,8,AC), (F,13,CF), (E,13,CE) |
| G |  | (S,0,-), (A,2,SA), (B,6,AB), (D,9,AD), (C,8,AC), (F,13,CF), (E,13,CE), (G,15,EG) |