Tutorial 1 Question 2

Here are the elaborate traces for the search questions.

Note : The notation used is <sequence-nodes-visited> (<frontier>). I have mentioned the parent in the square brackets next to the alphabet if the vertex has multiple parent vertices.

- DFS with tree-based search

S (B, C)
S - C (B, E[C])
S - C - E (B, D[E])
S - C - E - D (B)
S - C - E - D - B (A[B], D[B], E[B])
S - C - E - D - B - E (A[B], D[B], D[E])
S - C - E - D - B - E - D (A[B], D[B])
S - C - E - D - B - E - D - D (A[B])
S - C - E - D - B - E - D - D - A (F)
S - C - E - D - B - E - D - D - A - F (G)
S - C - E - D - B - E - D - D - A - F - G

- DFS with graph-based search

S (B, C)
S - C (B, E[C])
S - C - E (B, D[E])
S - C - E - D (B)
S - C - E - D - B (A[B], D[B], E[B])
S - C - E - D - B (A[B], D[B])
S - C - E - D - B (A[B])
S - C - E - D - B - A (F)
S - C - E - D - B - A - F (G)
S - C - E - D - B - A - F - G

- BFS with tree-based search

S (B, C)
S - B (C, A[B], D[B], E[B])
S - B - C (A[B], D[B], E[B], E[C])
S - B - C - A (D[B], E[B], E[C], F)
S - B - C - A - D (E[B], E[C], F)
S - B - C - A - D - E (E[C], F, D[E])
S - B - C - A - D - E - E (F, D[E], D[E])
S - B - C - A - D - E - E - F (D[E], D[E], G)
S - B - C - A - D - E - E - F - D (D[E], G)
S - B - C - A - D - E - E - F - D - D (G)
S - B - C - A - D - E - E - F - D - D - G

- BFS with graph based search

S (B, C)
S - B (C, A[B], D[B], E[B])
S - B - C (A[B], D[B], E[B], E[C])
S - B - C - A (D[B], E[B], E[C], F)
S - B - C - A - D (E[B], E[C], F)
S - B - C - A - D - E (E[C], F, D[E])
S - B - C - A - D - E (F, D[E])
S - B - C - A - D - E - F (D[E], G)
S - B - C - A - D - E - F (G)
S - B - C - A - D - E - F - G