Assignment-4
(Solutions)

A-1) (a) It is both eulerian & Hamiltonian graph.

Eulerian trail : d e a b c d a c e b d

Hamiltonian cycle: e a b c d e
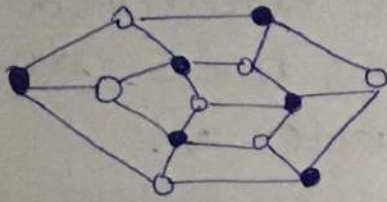
(b) It is ~~both~~ hamiltonian but not eulerian.

Hamiltonian cycle: a b h e f g c b a

(c) It is hamiltonian but not eulerian

Hamiltonian cycle: ~~a d c b e~~ a d c e b a

A-1)

By colouring the given graph in 2 colours, we can make it a bipartite graph.

Since it is a bipartite graph with odd no. of vertices (i.e. 13)

∴ By using theorem { A bipartite graph with odd no. of vertices is not hamiltonian),

we can say that the given graph is not hamiltonian.

A-2) It is a hamiltonian graph as we can find a hamiltonian cycle: acdba

It is not a semi-hamiltonian graph because we cannot find a hamiltonian path: acdb

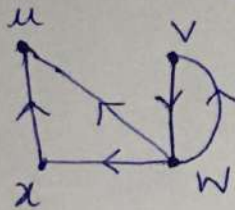Assignment - 6
(Solutions)

A-1) (a) Vertices = { a, b, c, d }

Arcs = { ba, cb, dc, da, db, bd }

(b) Vertices = { 0, 1, 2, 3, 4 }
Arcs = { 10, 12, 32, 43, 40 }
Both are simple digraphs (∵ no loops or multiple arcs)

A-2)

A-3) D_1 ✗ [∵ EC is not in D]

D_2 ✗ [∵ BA is not in D]