1a.

This is an AR(1) model where the stationary condition () is not met as . Therefore it is not covariance stationary.

1b.

This is an ARMA(1,1) model where . This model is covariance stationary if

In this case so this model is covariance stationary.

1c.

The first axiom of if something is covariance stationary is that E() is constant however in this case E() = and is therefore time dependant and not constant. Thus it is not covariance stationary.

2.

is an AR(1) model where the stationary condition is met and therefore it is covariance stationary.

E() = E() + = =

We can see that this pattern will repeat infinitely and therefore,

E() = = =

Thus statement B is the only true statement.

3a.

The conditional mean of is the mean of given its previous terms. The previous terms are irrelevant however as E( ) = and thus the conditional mean, E( ) = 0.

3b.

4a.

4b.

4c.

5a.

5b.

5c.

6a.

6b.

6c.