

a)

For :

:

:

:

:

Thus,

Question 2

1. By partial fractions

a) Since, is causal therefore ROC: which includes the unit circle . Then the system is stable

b) Taking inverse -transform of with ROC gives

2. By partial fractions (same as part 1.)

a) Since, is anti-causal, therefore ROC: which is not including the unit circle . Then the system is unstable

b) Taking inverse -transform of with ROC gives

3. By partial fractions

Where and

a) Since , then there are 3 ROC for . But is two sides which are anti-causal (ROC I) or causal (ROC II).

For ROC I: does not include which is unstable.

For ROC II: have a margin which is marginally stable.

b)

Taking inverse -transform of with ROC I: gives

Taking inverse -transform of with ROC I: gives

Where and

4. We have

a) Since, is causal therefore ROC: have a margin which is marginally stable.

b) Taking inverse -transform of with ROC gives