The following has to be created for the solution:

1. Create a VPC.

2. Create 4 subnets of which 2 are public with different regions and 2 are private with different regions.

Two different regions are selected for two subnets for the High Availability(HA).

3. Create a Internet Gateway and attach it to VPC.

4. Create a NAT Gateway.

An Elastic Ip should be attached to it.

5. Create a Route Table for the VPC .

For every VPC a default main Route Table is there.

6. Add a rule for the public subnet using Internet Gateway.

The traffic for the instances in public subnet has to be travelled from Internet Gateway.

7. Add a rule for the private subnet using NAT Gateway.

The traffic for the instances in private subnet has to be travelled from NAT Gateway.

8. Create a Load Balancer using 2 public subnets which are in different regions.

The Load Balancer will divide the traffic across public subnets.

9. Create an instance in each public subnets and install Apache.

Two instances are created in two regions for High Availability.

10. Create another instance in each public subnet and install Apache tomcat.

Two instances are created in two regions for High Availability.

11. Create a RDS instance in one of the private subnet.

12. Create replica of the RDS instance using Multi-AZ feature.

Maulti-AZ feature has to be used for replication of RDS across the regions.

13. Likewise create MangoDB and replicate it across regions.