HoTe: Solve the following questions using R.

PART-A:

1) Create a vector with elements being 98, 82, 102, 99,100;
  a) Extract the first element
  b) Extract the first and the fifth element from the vector.

2) Solve the following questions in R –
   (a) Create a vector with first 100 natural numbers. Compute its mean and median.
   (b) Create a vector with 12, 13, 12, 15, 32, 32, 24, 24, 53, 45, 78, 53, 91. Compute its mean and median.
   (c) Create a random vector of length 10 with values between 20 and 40. Compute its mean and median
   (d) Calculate the mode for following numbers using table and modes function. Report your observation.

$$Y <- c(10, 10, 20, 20, 20, 20, 30, 30, 30, 25, 75, 30)$$

PART-B:

1) The following table is the age distribution of 1000 persons working in a large industrial house:

Age Group	No. of Persons
20 – 25	30
25 – 30	160
30 – 35	210
35 – 40	180
40 – 45	145
45 – 50	105
50 – 55	70
55 – 60	60
60 – 65	40

Due to continuous heavy losses the management decides to bring down the strength to 30% of the present number according to the following scheme:

i.   To retrench the first 60% starting from the lower side of the groups.
ii. To retrench the first 10% starting from the higher side of the groups.

Calculate the age limits of the persons retained and those to be transferred to the other departments. Also find the average age of those who retained.