The International Student Association at a certain University tracks all records of students from abroad. The Variables in the data include (1) Name, (2) Age , (3) Country of Origin , (4) Number of Countries visited prior to U.S. 25 students was collected randomly among all international students and their ages are as show in the stem and leaf plot below:

```
1          5   6    7    7   7    8   8    8   9   9
2          0   0    1   1    2     4    4   7    8
3          2   3    5    6    9
4          5
```

Answer all the questions below according to information given above.

i) (1 pt) Specify the type of data for each variable: (A- for Qualitative, B-for Quantitative)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td></td>
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</tr>
</tbody>
</table>

ii) (1 pt) Records of all international students for this university form a ________________.

A. Population  B. Sample  C. Variable  D. Parameter

iii) (1 pt) What type of plot would you suggest to represent data for the variable (3) i.e. Country of origin

A. Bar plot   B. Histogram   C. Scatterplot  D. Dot plot

iv) (2 pts) Construct a dot plot for the above age data.

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15                      20                        25                   30                    35                    40                      45
```

v) (1 pt) Encircle the right histogram option (A, B, C or D) which represents the above stem and leaf plot for age.

A   
B   
C   
D   

![Histogram Options](image-url)
vi) (1 pt) What is the value of the mean for variable Age?
A. 25.03   B. 27.22  C. 24.04  D. 31.25

vii) (1 pt) If the median value for the ages of 25 students equals 21, considering the value of mean calculated in the previous question, encircle the correct choice given below.
A. The data set for ages of 25 students is skewed to right.
B. The data set for ages of 25 students is skewed to left.
C. The data set for ages of 25 students is symmetric.
D. The data set for ages of 25 students has a rectangular shape.

viii) (2 pt) What are the values of the variance and standard deviation, respectively for variable Age?
A. 66.88, 8.18  B. 91.49, 9.57  C. 86.56, 9.30  D. 72.98, 8.54

ix) (1 pt) If the upper quartile for the variable age equals 30, which one of the following choices is true?
A. 25% of students are younger than 30.
B. 25% of students are older than 30.
C. 50% of students are younger than 30.
D. The difference between maximum age and minimum age is 30.

x) (1 pt) Consider a specific student with the age of 45 among 25 students. Which one of the following choices is true?
A. This value is located 2.19 standard deviations away from the mean age, and it is a possible outlier.
B. This value is located 1.83 standard deviations away from the mean age, and it is not an outlier.
C. This value is located 2.56 standard deviations away from the mean age, and it is an outlier.
D. This value is located 1.71 standard deviations away from the mean age, and it is not an outlier.

xi) (1 pt) Encircle the correct choice below:
A. Empirical rule applies for the sample of 25 students’ ages. And almost 68% of students’ ages lie within the interval of (7.68, 40.4).
B. Empirical rule applies for the sample of 25 students’ ages. And almost 95% of students’ ages lie in the interval of (7.68, 40.4).
C. Only Chebyshev’s rule applies for the sample of 25 students’ ages. And at least 75% of students’ ages lie within the interval of (7.68, 40.4).
D. Only Chebyshev’s rule applies for the sample of 25 students’ ages. And at least 89% of students’ ages lie within the interval of (7.68, 40.4).

xii) (1 pt) Which among these boxplots represents the sample correctly?
xiii) (1 pt) If the sample Z-score for the age of an international student is -1.2, what is the age of the student?
A. 14.224  B. 16.326  C. 33.856  D. 42.966