(6) The histogram suggests that it may be an exponential distribution.

$$F(X_{(k)}) = \frac{k - 1/2}{N}$$

$$1 - e^{-\lambda X_{(k)}} = \frac{k - 1/2}{N}$$

$$y_k = X_{(k)} = \frac{-1}{\lambda} \ln\left(1 - \frac{k - 1/2}{N}\right)$$

From the excel sheet, $\frac{1}{\lambda} = \text{mean} = 9.459$

Looking at the diagram given by sir,

N	n
$20 < N \leq 50$	$5 < n \leq 10$

I would prefer to use a value of "n" which is closer to 10 corresponding to the value of "N" residing in the right half.

value of N ...

I choose $n = 8$ with $df = 8-1-1 = 6$.

From the notes, we have,

$$p = 1 - F_v(\chi^2)$$

$$= 1 - \frac{1}{2^{v/2}\,\Gamma v/2} \int_0^{\chi^2} z^{v/2-1} e^{-z/2} \cdot dz$$

$$= 1 - \frac{1}{2^{6/2}\,\Gamma 6/2} \int_0^{\chi^2} z^{6/2-1} e^{-z/2} \cdot dz$$

$$= 1 - \frac{1}{2^3 \cdot 2} \int_0^{\chi^2} z^2 e^{-z/2} \cdot dz$$

$$= 1 - \frac{1}{2^4} \int_0^{1.84} z^2 e^{-z/2} \cdot dz$$

From excel, I computed $\chi^2 = 1.84$.

$$p = 1 - \frac{1}{16} (1.05904)$$

$$= 1 - 0.06619$$

$-1 \quad 0.0\ldots$

$= 0.93381$

Therefore, we are confident that our hypothesis of the distribution being exponential is true.