Q.1

Interval	O	E	O-E	$(O-E)^2$	$(O-E)^2/E$
0-0.1	112	100	12	144	1.44
0.1-0.2	101	100	1	1	0.01
0.2-0.3	94	100	-6	36	0.36
0.3-0.4	99	100	-1	1	0.01
0.4-0.5	108	100	8	64	0.64
0.5-0.6	93	100	-7	49	0.49
0.6-0.7	94	100	-6	36	0.36
0.7-0.8	100	100	0	0	0
0.8-0.9	104	100	4	16	0.16
0.9-1.0	95	100	-5	25	0.25

$\Sigma = 3.72$

$W = 3.72$

$\chi^2_{0.05,9} = 16.919$

$3.72 < 16.919$

So the Null Hypothesis is Accepted i.e given data follows uniform distribution.

2.2.

Hours	0	1	2	3	4	5	6	7
Frequency of arrival	22	53	58	39	20	5	2	1
fx	0	53	116	117	80	25	12	7

poisson distribut^{n} is

$$P(X=x) = \frac{e^{-\lambda}\lambda^{x}}{x!} ; x = 0, 1, 2, 3, \ldots$$

we need the value of λ

$$\text{mean} = \frac{\Sigma fx}{\Sigma f}$$

$$= \frac{410}{200} = 2.05$$

$$P(X=x) = \frac{e^{-2.05} * 2.05^{x}}{x!} ; x = 0, 1, 2, \ldots$$

	0	1	2	3	4	5	6	7
P_i	0.128	0.263	0.270	0.184	0.094	0.038	0.013	0.003
e_i	25.6	52.6	54	36.8	18.8	7.6	2.6	0.6

3.2

10.8

$$W = \frac{(22-25.6)^2}{25.6} + \frac{(53-52.6)^2}{52.6} + \frac{(58-54)^2}{54} + \frac{(39-36.8)^2}{36.8} +$$

$$\frac{(20-18.8)^2}{18.8} + \frac{(8-10.8)^2}{10.8}$$

$$= 0.506 + 0.003 + 0.296 + 0.131 + 0.076 + 0.72$$

$$W = 1.732$$

$$\approx \chi^2_{6-1-1,0.05} = 9.48$$

$$1.732 < 9.48$$

Here Null Hypothesis is Accepted