

## Question

(2) Draw the ESRI direction encoding for 8-direction pour point model and develop the grid network for following ESRI direction encoding. Also develop the flow accumulation grid for 8 cell threshold.

[1+2+2]

2	2	4	4	8
1	2	4	8	4
4	1	2	4	8
2	4	4	4	4
1	2	1	4	16

## Solution:

- a. First we draw the flow directions from the above direction encoding based upon the ESRI direction encoding as shown below:

32	64	128
16		1
8	4	2



↖	↑	↗
←		→
↙	↓	↘

Figure 1: Flow Direction Encoding

Figure 2: Flow Direction

- b. Based upon the aforementioned encoding, the directions of the flow is shown below:

2	2	4	4	8
1	2	4	8	4
4	1	2	4	8
2	4	4	4	4
1	2	1	4	16



↘	↘	↓	↓	↙
→	↘	↓	↙	↓
↓	→	↘	↓	↙
↘	↓	↓	↓	↓
→	↘	→	↓	←

Figure 3: Flow Direction Encoding

Figure 4: Flow Direction

- c. Now we compute the flow accumulation based upon the flow directions:  
*(Flow accumulation in each sum total of arrow accounts pouring into that particular cell. It is a better idea to start with the corners where the flow accumulation is zero. Then progress towards interior cells.)*

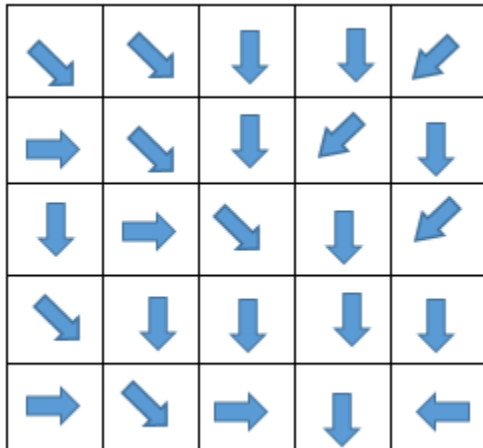


Figure 1 : Flow Direction

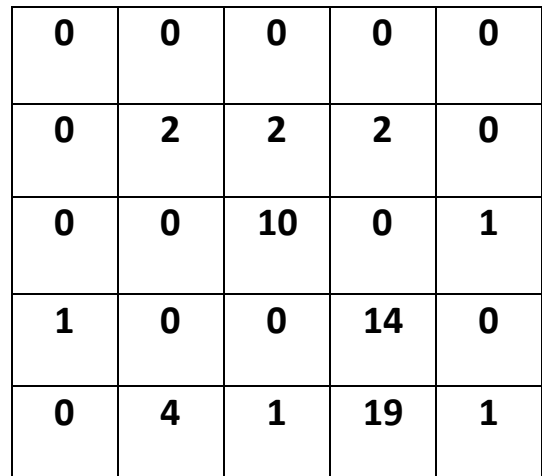


Figure 2: Flow Accumulation