**ONIHA ROBERT AGBONIGHALE**

**17/ENG03/046**

**QUESTON 1**

Softwares used for carrying out hydrological data

* HIRO2-is a spatially distributed rainfall-runoff model for event-based studies of space-time watershed processes.
* GenScn-provides an interactive framework for analysis built around an established and adaptable watershed model
* MapObjects-is used to provide mapping functionality.
* WATROUTE-is a channel routing model that assumes all of the input data represents water that is already in the river channels.
* HSPF-is used for simulating the hydrologic and associated water quality processes on pervious and impervious land surfaces and in streams and well-mixed impoundments.

**QUESTON 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| time(hr) | Run off | baseflow | direct runoff | DR\*dt | 2 hr unit hydrograph ordinate |
| 1 | 110 | 110 | 0 | 0 | 0 |
| 2 | 120 | 110 | 10 | 10 | 7.067138 |
| 3 | 210 | 110 | 100 | 100 | 70.67138 |
| 4 | 580 | 110 | 470 | 470 | 332.1555 |
| 4.7 | 660 | 110 | 550 | 385 | 388.6926 |
| 5 | 640 | 110 | 530 | 159 | 374.5583 |
| 6 | 440 | 110 | 330 | 330 | 233.2155 |
| 7 | 280 | 110 | 170 | 170 | 120.1413 |
| 8 | 200 | 110 | 90 | 90 | 63.60424 |
| 9 | 160 | 110 | 50 | 50 | 35.33569 |
| 10 | 120 | 110 | 10 | 10 | 7.067138 |
| 10.5 | 100 | 95 | 5 | 2.5 | 3.533569 |
| 11 | 90 | 90 | 0 | 0 | 0 |
| 12 | 80 | 60 | 20 | 20 | 14.13428 |

Area=1715ac

EDR\*dt=1796.5

Depth=1796.5/1715=1.048in

Value=1.415