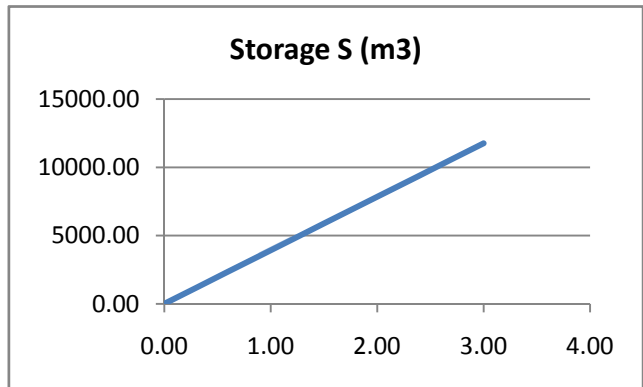


Lecture 25

14-March-2013

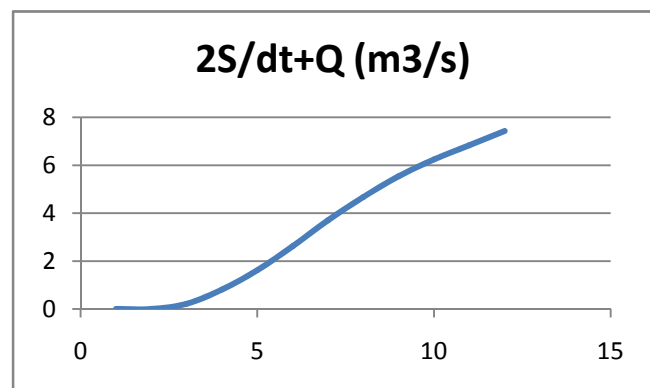
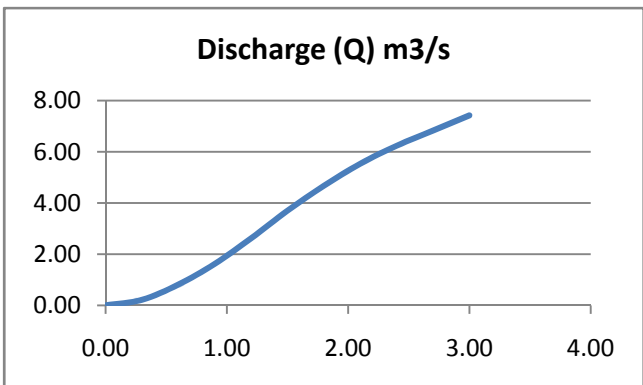
A reservoir of area 2500 m^2 is made for detaining flood flows. The dammed portion of the reservoir has vertical walls and has a 1.5 m diameter pipe at the outlet. The headwater-discharge relation for the given reservoir is:

Elevation (H) m	Discharge (Q) m ³ /s	Storage S (m ³)
0.00	0.00	0.00
0.30	0.22	1176.12
0.60	0.81	2352.24
0.90	1.62	3528.36
1.20	2.62	4704.48
1.50	3.70	5880.60
1.80	4.67	7056.72
2.10	5.54	8232.84
2.40	6.24	9408.96
2.70	6.83	10585.08
3.00	7.43	11761.20



Use level pool routing method to calculate the reservoir outflow from the inflow hydrograph.

SI No.	Time (min)	Inflow (m ³ /s)
1	0	0.00
2	10	2.00
3	20	4.00
4	30	6.00
5	40	8.00
6	50	6.50
7	60	5.00
8	70	3.50
9	80	2.00
10	90	0.50
11	100	0.00



SlNo.	Time (min)	Inflow (m ³ /s)	I _j + I _{j+1} (m ³ /s)	2S _j /Dt-Q _j (m ³ /s)	2S _{j+1} /Dt+Q _j (m ³ /s)	Outflow (m ³ /s)	2S _{j+1} /Dt-Q _{j+1} (m ³ /s)
1	0	0.00		0.00		0.00	0.00
2	10	2.00	2.00	0.00	2.00	0.11	1.79
3	20	4.00	6.00	1.79	7.79	0.70	6.40
4	30	6.00	10.00	6.40	16.4	2.23	11.93
5	40	8.00	14.00	11.93	25.93	4.22	17.49
6	50	6.50	14.50	17.49	31.99	5.36	21.27
7	60	5.00	11.50	21.27	32.77	5.50	21.77
8	70	3.50	8.50	21.77	30.27	5.05	20.17
9	80	2.00	5.50	20.17	25.67	4.17	17.33
10	90	0.50	2.50	17.33	19.83	2.95	13.93
11	100	0.00	0.50	13.93	14.43	1.83	10.76
12	110	0.00	0.00	10.76	10.76	1.17	8.42
13	120	0.00	0.00	8.42	8.42	0.78	6.86
14	130	0.00	0.00	6.86	6.86	0.58	5.71
15	140	0.00	0.00	5.71	5.71	0.43	4.86
16	150	0.00	0.00	4.86	4.86	0.31	4.23
17	160	0.00	0.00	4.23	4.23	0.23	3.77
18	170	0.00	0.00	3.77	3.77	0.20	3.37
19	180	0.00	0.00	3.37	3.37	0.18	3.01
20	190	0.00	0.00	3.01	3.01	0.16	2.69
21	200	0.00	0.00	2.69	2.69	0.14	2.40
22	210	0.00	0.00	2.40	2.40	0.13	2.15
23	220	0.00	0.00	2.15	2.15	0.11	1.92
24	230	0.00	0.00	1.92	1.92	0.10	1.72

