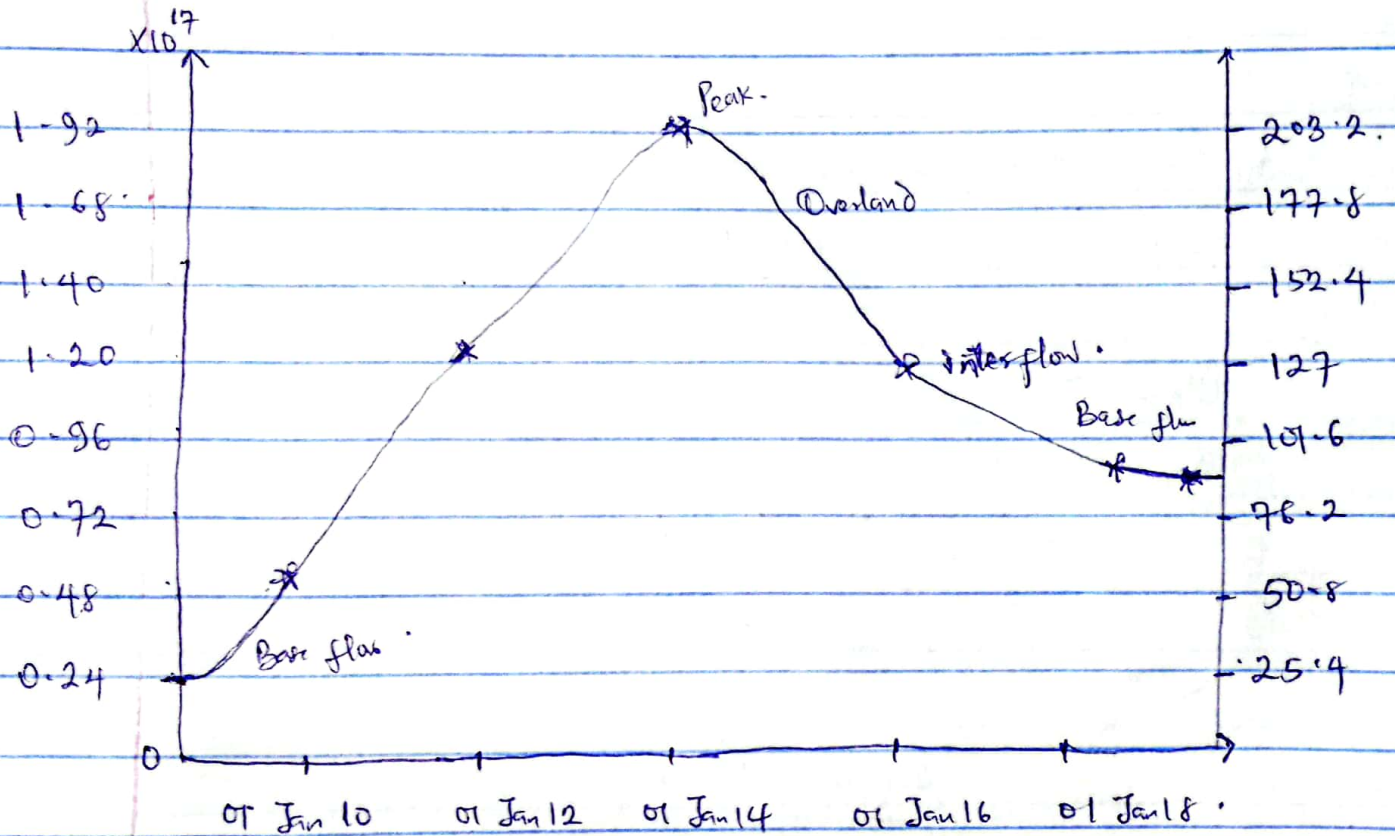


CE 54400 WEEK 1 ASSIGNMENT.

1. Drainage area: 7267 sq. mi.



From Mass balance Equation;

$$\text{Input} - \text{Output} = \text{Storage}.$$

Hence Precipitation - Evapotranspiration - Runoff = Storage.

$$P - ET - \Phi = S.$$

but since there is no other inflow and outflow.

$$\therefore \Phi = 0.$$

$$\Rightarrow P - ET = S.$$

$$\therefore ET = P - S.$$

8/6/36mm

$$ET = (86.36 \text{ mm} - 1.92 \times 10^{17}) \text{ mm}.$$

2.

t_1 : time taken to drop one log : 80 days.

$$\text{Critical time}^* (t_c) : \frac{\log_{10} 10^1}{\log_{10} 10} \times 80 = 8 \text{ days}.$$

$$Q_B = 5 \text{ m}^3/\text{s}.$$

$$Q_A = 0 \text{ m}^3/\text{s}.$$

$$G = \frac{2 (Q_B - Q_A) t_1}{2.3}.$$

$$= \frac{2 (5 - 0) \times 3.3 \times 10^6}{2.3}.$$

$$= \frac{2 \times 5 \times 3.3 \times 10^6}{2.3}$$

$$G = 1.43 \times 10^7 \text{ ft}^3.$$