1   The students are asked to calculate the bed-load discharge using the methods proposed by Schoklitsch, Meyer-Peter et al., and Meyer-Peter and Müller, using the following data and the data from the samples obtained from Zayandeh-Roud, Then, find a software and compute the bed-load discharge. Compare the results of the software with your own results and comment on the software capabilities and faults.

$$D = 0.5 \text{ m} \quad ; \quad S_0 = 0.00144 \quad ; \quad B = 21 \text{ m} \quad ; \quad V = 1.0 \text{ m/s}$$

2   Given the following data, compute the suspended load weight discharge using Brooks method.

$$q = 9 \text{ m}^3/\text{s/m} \quad ; \quad n = 0.02 \quad ; \quad R = D = 5 \text{ m} \quad ; \quad S = 0.001$$
$$d_{50} = 0.2 \text{ mm} \quad ; \quad a = 0.25 \text{ m} \quad ; \quad C_a = 0.0001 \text{ by dry weight}$$

3   Given the following data and the data from the samples obtained from Zayandeh-Roud, compute the Total load discharge using Einstein method.

$$Q = 55.5 \text{ m}^3/\text{s} \quad ; \quad W = 41.0 \text{ m} \quad ; \quad R = D = 2.0 \text{ m} ; \quad S = 0.000077$$
$$V = 0.69 \text{ m/s}$$