

CENTRAL INSTITUTE OF TECHNOLOGY KOKRAJHAR  
(Deemed to be University)  
KOKRAJHAR :: BTR :: ASSAM :: 783370

**END – SEMESTER EXAMINATION**  
**PG**

Session: July-December, 2024      Semester: 1<sup>st</sup>      Time: 3Hrs.      Full Marks: 100  
Course Code: MCE1110 / PCE1112      Course Title: Ground water Hydrology

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***ANSWER ALL QUESTIONS***

1. Write in details of the following: 5\*4 = 20
  - i. Ground water basin and spring
  - ii. Equivalent hydraulic conductivity
  - iii. Various techniques of artificial recharge
  - iv. Groundwater contamination processes
2. What do you mean by molecular diffusion? Derive the mathematical expression for Fick's 1<sup>st</sup> and 2<sup>nd</sup> law. Draw the figure if required. 20
3. Find out the expression of drawdown for well near a stream. Assume the necessary. Draw the figure if required. 20
4. What are the various methods by which one can estimate the groundwater recharge? Write in details about any two methods. 20
5. Derive the mathematical expression for flow through unconfined vertically stratified aquifer. Assume the necessary. Draw the figure if required. 20

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