

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

END – SEMESTER EXAMINATION
PG

Session: Jan-June, 2025

Semester: 2nd

Time: 3Hrs.

Full Marks: 100

Course Code: MCE202

Course Title: Hydraulics of Sediment Transport

ANSWER ALL QUESTIONS

1. a) Find the expression for power (P), developed by a pump when P depends upon the head (H), the discharge (Q), and specific weight (γ) of the fluid (use Rayleigh's method). **12**
b) Discuss various types of bed forms (draw the necessary figures). **8**
2. Derive the governing equation for shear stress in steady uniform flow in an open channel. Assume the necessary. **20**
3. Discuss in details about Shields' approach for sediment threshold analysis. **20**
4. a) Derive the governing mathematical expression for turbulent logarithmic layer. Assume the necessary. **15**
b) What do you mean by threshold velocity? **5**
5. Write down the following in details. **5*4**
 - a) Concept of meandering
 - b) Angle of repose
 - c) Turbulent intensity
 - d) Threshold bed shear stress on a streamwise sloping bed.
