BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: M.Tech/Pre-PhD **SEMESTER : II/I**
BRANCH: REMOTE SENSING **SESSION : SP/22**

SUBJECT: RS 516 REMOTE SENSING IN SNOW AND GLACIER HYDROLOGY

TIME: 2 Hours **FULL MARKS: 50**

INSTRUCTIONS:

1. **Answer all questions**
2. **Marks for each question is indicated against the respective questions**

Q.1(a) What are glaciers? Discuss and enumerate different types of mountain glaciers and land glaciers. [6]

Q.1(b) Give a perspective of erosional, transportation and depositional works of glaciers especially with respect to mountain glaciers. [5]

Q.2(a) What type of parameters have been considered for the Global Land Ice Measurements from Space (GLIMS) classification system of Glaciers? What are the classes of Glacier classification proposed for GLIMS? [6]

Q.2(b) What is understood by Glacier Mass Balance and ELA? How can glacier mass balance studies help in understanding climate change impacts on glaciers? [5]

Q.3(a) Snow covered areas on the Globe – give a perspective? [5]

Q.3(b) Glacier retreat records in the past – elaborate with respect to the spatially recorded facts. [5]

Q.4(a) Why are the depth and density of snow important? How can they help in ascertaining water yield or snow water equivalent? [5]

Q.4(b) How can remote sensing be helpful in measuring terrestrial snow cover? Elaborate in terms of optical and microwave remote sensing. [4]

Q.5(a) What are the two basic approaches for different Snow Melt run-off models for snow hydrology? How do these approaches differ in terms of output? [5]

Q.5(b) Write short notes on any two models: i. SRM ii. PRMS iii. HBV iv. UBC Model [4]

:::::02/05/2022:::::