

Mid-West University
Examinations Management Office
End-Semester Examinations -2080

Bachelor level/ B.E. Hydropower/ II Semester
Time: 4 hours
Subject: Basics of Water Resources (HE422)

Full Marks: 50
Pass Marks: 25

- Attempt all the questions
- Figures in the margin indicate full marks.
- Assume suitable values, with a stipulation, if necessary.
- Candidates are required to answer the questions in their own words as far as possible.

1. a) A run of the river plant is installed on a river having a minimum flow of $18\text{m}^3/\text{sec}$. If the plant is used as a peak load plant operating only for 9 hours daily. Compute the firm capacity of the plant i) without pondage ii) with pondage but allowing 13% of water to be lost in evaporation and other losses. Head at the plant is 100m and the plant efficiency may be assumed as 85%. (6)
b) Explain Pumped storage type of Hydropower project with neat sketches? (4)
2. a) What are the major institutions involved in hydropower development sector? Explore their brief roles? (5)
b) What are the opportunity and challenges in developing hydropower project in Nepal? (5)
3. a) Describe the role of remote sensing and GIS in water resources? (5)
b) Discuss the hydrological water budget with the aid of examples. What are the significant features of global water balance studies? (5)
4. a) List out the various water use with example? (5)
b) What do you understand by global changes? List major global changes and their implication on water? (5)
5. a) What is global warming and what causes global warming? (5)
b) What is urbanization? How does urbanization impact the water cycle? (5)

The End