

THESIS

**DEVELOPMENT OF A COMPUTER WORKSHEET
MODEL FOR DESIGN OF ALLUVIAL CANAL SYSTEM
AND APPLICATION FOR DESIGN OF RAINEE CANAL
SYSTEM**



BY

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ABSTRACT

The Almighty Creator created every living thing from water. Water is life. The world population is increasing rapidly but the resources of water are becoming out of reach to full fill the basic needs of human being. Agriculture was one of the first professions a man adopted. With the development of the science and technology, agriculture is still the most important of all the requirements of mankind. Agriculture depends upon the availability of water for which the reliable source of water supply is a good irrigation system. An irrigation system takes water from a river (sometimes from a dam) and through a network of canals, delivers water to fields. This water is used for irrigation, drinking and other purposes.

Since a century ago many canal systems have been developed in different parts of the world. However the existing systems need improvement and continuous maintenance. With increasing demand of water, a reliable irrigation system is much needed.

Irrigation canals take water mostly from rivers which contain silt of varying amount. If a canal system is not properly designed, the flowing water can cause scouring or deposition of silt thereby reducing the capacity of the canal. To maintain a canal system, heavy expenses are incurred to keep the canal system in good operating condition. It is desired that the canal system should be designed in such a way that hydraulic as well as sediment transportation aspects are covered in such a way that there is minimum problem of operation and maintenance. The present study is focused on the point that a stable canal system should be designed which conveys water and the associated silt. Different methods of design have been discussed and for

some selected methods computer worksheets have been developed which are used for design of Rainee Canal System.

The computer worksheets are a very easy and user friendly tool for students researchers and design professionals interested in design of canals with consideration of sediment transport aspects.

The computer worksheets give the full detail of the formulae used, description of variables and the units. The worksheets are very easy as well as comprehensive. After a data is input the solution is available forthwith. The study has helped a lot for design of Rainee Canal System and similar works can be designed very easily on the basis of these lines.

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