VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590018

PROJECT REPORT ON
"AN INTEGRATED STUDY ON GUNDIA RIVER BASIN - A CASE STUDY"

Submitted in partial fulfilment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
CIVIL ENGINEERING

Submitted By

Name	USN
PRIYANKA M	4AL15CV070
RAGHAVENDRA G M	4AL15CV071
RASHMITHA G R	4AL15CV079
SHARATH GOWDA N	4AL15CV095

Under the Guidance of
Dr. H AJITH HEBBAR
Associate Professor and Head
DEPARTMENT OF CIVIL ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY
SHOBHAVANA CAMPUS, MIJAR, MOODBIDRI – 574 225.

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ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

(A Unit of Alva's Education Foundation®, Moodbidri)

"Shobhavana", Mijar, Moodbidri – 574 225, D.K.

DEPARTMENT OF CIVIL ENGINEERING

Certificate

This is to certify that following students

Name	USN
PRIYANKA M	4AL15CV070
RAGHAVENDRA G M	4AL15CV071
RASHMITHA G R	4AL15CV079
SHARATH GOWDA N	4AL15CV095

Has submitted Final report on **"AN INTEGRATED STUDY ON GUNDIA RIVER BASIN -A CASE STUDY"** for VIII Semester Bachelor of Engineering in Civil Engineering during the academic year 2017-18. The final report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

Dr. H Ajith Hebbar	Dr. H Ajith Hebbar	Dr. Peter Fernandes
Project Guide	HOD	Principal
	Dept. of Civil Engineering, Alva's Institute of Engg. & Technology, Mijar, Moodbidri - 574 225	Alva's Institute of Engg. & Technology, Mijar, MOODBIDRI - 574 225, D.K.

Name of the Examiners **Signature with Date**

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ABSTRACT

The Gundia River originates from Kemphole basin of the length 36000m and is located in Gundia village Dakshina Kannada District. It is the 1st order tributary of Kumaradhara River. In this study morphometric analysis of the Gundia basin developed. The main aim of this study is to analysis morphometric parameter of river basin area. The geometric properties of drainage basin are estimated on Topographical Sheet, Satellite imagery and GIS techniques on the scale of 1:50,000. The study gives a wide description of drainage network analysis, like streams order, drainage density, drainage frequency, length ratio, relief ratio etc. and these are clear evidences for the structural control. The drainage analysis involves the study of drainage textures. The drainage features of the Gundia Basin are dependent on the geology, geomorphology, topography and climate. Therefore, in the study a systematic analysis of the pattern in the drainage network as well as the morphometry of the basin has been undertaken. The conventional means to record hydrological parameters of a flood often fail to record an extreme event. Remote sensing technology along with geographic information system (GIS) has become the key tool for flood monitoring in recent years. Development in this field has evolved from optical to radar remote sensing, which has provided all weather capability compared to the optical sensors for the purpose of flood mapping. The central focus in this field revolves around delineation of flood zones and preparation of flood hazard maps for the vulnerable areas. In this exercise flood depth is considered crucial for flood hazard mapping and a digital elevation model (DEM) is considered to be the most effective means to estimate flood depth from remotely sensed or hydrological data. In a flat terrain accuracy of flood estimation depends primarily on the resolution of the DEM. River flooding in the developing countries of monsoon Asia is very acute because of their heavy dependence on agriculture but any flood estimation or hazard mapping attempt in this region is handicapped by poor availability of high resolution DEMs. The application of remote sensing and GIS in flood management with particular focus on the developing countries of Asia.