SMVDU/SoEM/17 Date: Dec` 18, 2017

Notification

**Notification for admission test to Ph.D. program in Energy, School of Energy Management, Faculty of Engineering (Dec` 2017-May` 2018)**

1. The provisionally shortlisted (Non GATE) candidates are required to appear in written test on Dec` 19, 2017. After qualifying the written examination, they are required to be present for the interview/presentation and viva.

2. Shortlisted candidates are required to report at School of Energy management at 10:00 AM on 19th Dec, 2017 in SMVD University. The candidates are required to bring in original documents in support of their qualification and experience.

Sd/-

HoD, SoEM

# Syllabus for PhD Admission Examination in School of Energy Management

## **Research Methodology**:

Introduction to Research Methods, Definition and Objectives of Research, Various Steps in Scientific Research, Types of Research; Research Purposes - Research Design - Survey Research - Case Study Research. Data Collection and Sampling Design, Sources of Data: Primary Data, Secondary Data; Questionnaire design Survey and Experiments – Design of Survey and Experiments - Sampling Merits and Demerits - Control Observations - Procedures - Sampling Errors. Statistical Modeling and Analysis, Probability Distributions, Fundamentals of Statistical Analysis and Inference, Concepts of Correlation and Regression, Time Series Analysis and Spectral Analysis, Error Analysis, Research Reports -Structure and Components of Research Report, Types of Report, Layout of Research Report, Mechanism of writing a research report.

## **Energy**

Renewable energy sources, Potential, solar radiation, Atmospheric phenomena, Measurement of solar radiation, Low temperature applications, Solar distillation, Heat pump, Solar refrigerator, Passive space conditioning, Solar thermal power generation , Photovoltaic, wind energy

First and second law of thermodynamics, Thermal fluid systems, Standard cycles, Mixtures of gases, Heat transfer, Fluid mechanics,.

Different types of power generation Types of thermal power plants; Steam power plant based on fossil fuels; Thermal power plant equipment: Boiler, Economizer, Super heater, Condenser, Combustion chamber and gas loops, Turbines etc, Auxiliaries. Hydropower plant Mass curve and storage capacity; Classification; Components; Turbines- Characteristics and their selection; Governor; Plant layout and design; Auxiliaries; Underground, automatic, remote controlled, and pumped storage plants. Nuclear power plant, Nuclear reactors and fuels.