स्थापत्य

A NEWS LETTER OF CIVIL DEPARTMENT

SPECIAL POINTS OF INTEREST:

- **Students Results**
- **Faculties Achievements**
- **Social Activity**
- **Industrial Visits**
- **Lecture Talks by Professionals**
- **Departmental Activities**
- **State Level Technical Event**

MSBTE Academic Result Winter 2018

Maharashtra State Board of Technical Education (MSBTE) has conducted the Winter 2018 Examination in month of November-December 2018. For this Examination from our department two sixty students was appeared. The overall result of department was 85.00 % for the Winter 2018 examination.

Topper Students of Department

FIRST YEAR		SECOND YEAR		THIRD YEAR	
1) Wadhwani Sahil	84.14 %	1) Zinjurde Neha	87.22 %	1) Pathan Mujahid	93.29 %
2) Pardeshi Nikita	81.57%	2) Ghugare Shantanu	84.67%	2) Wankhede Pooja	89.18 %
3) Varma Varad	81.42 %	3) Chavan Snehal	83.78 %	3) Wagh Aditya	89.06 %

Prof. Toshniwal S. S.
Lecturer

Prof. Shaikh S. J.
M. E. (Structures)
Lecturer

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Prediction of Concrete Mix Proportion Using Artificial Neural Network

Concrete mix design is complicated and time consuming, experience based and uncertain task. Most of the time to achieve the desired strength, one has to depend upon past experience in mix design process and some sort of trial and error methods the final acceptance come after quality control test results. In mix design min task is proportioning the ingredients of concrete (water , cement , coarse aggregates , fine aggregates) to chive desired strength. The ANN model is based on 7 input parameters such as cement, sand, coarse aggregate, and water and fineness modulus. ANN is used to reduce number of trials need to be perform in laboratory as well as in field. ANN is very helpful in saving lot of time cost of materials as well as labour. ANN gives higher accuracy. with the help of ANN we can predict of concrete mix for desired strength.

Road Defects and Highway Maintenance

This paper summarizes the ongoing researches about the defects in Flexible and Rigid pavement and the maintenance in Flexible and Rigid pavements. In the past, lots of researchers have already studied the defects and problems of maintaining the Flexible and Rigid pavements all over the world. Efforts have been made to refer some of the publications related to this topic. Various defects in Flexible and Rigid pavements have been identified since the existence of Flexible and Rigid pavement. Pavement structure can be destroyed in a single season due to water penetration .Defects in Flexible and Rigid pavements is a problem of multiple dimensions, phenomenal growth of vehicular traffic (in terms of no. of axle loading of commercial vehicles), the rapid expansion in the road network, non-availability of suitable technology, material, equipment, skilled labor and poor funds allocation have all added complexities to the problem Flexible and Rigid pavements. Maintenance is set of activities directed towards keeping a structure in a serviceable state during its design life, Maintenance of a road network involves a variety of operations, i.e., identification of deficiencies and planning, programming and scheduling for actual implementation in the field and monitoring. The essential objective should be to keep the road surface and appurtenances in good condition and to extend the life of the road assets to its design life. Broadly, the activities include identification of defects and the possible cause there off, determination of appropriate remedial measures; implement these in the field and monitoring of the results. , Road, Rutting, Paved Roads.

Submerged Floating Tunnel

Submerged Floating Tunnel is a new concept, It is a new type of transport structure. It is very different from other structures like bridges and tunnels, It is the new invention in which the conventional structure in crossing long , large and deep water areas. For construction of this type of structure it is an challenge to all the technology this article discuss some problems and challenges, which are faced in design and construction of SFT, Such as wave load determination, vibratuins, reduction of accidental load. The technology difficulties and corresponding solution were proposed. At last, the several key problems to be need further research were proposed, so as to provide for the design, construction and project risk analysis of future SFT

Prof. Domale A. P.
M. E. (Structures)
Lecturer

Seismic Analysis of RCC and Steel Frame Structure By Using ETABS

The residential housing sector (G+3,G+6 etc.) use of steel has increased, but RCC construction still predominates the Indian construction business.In the present study an attempt has been made to analyze the seismic behavior of RCC and steelframes using Etabs2015.The high self-weight and brittleness of concrete is not favorable to seismic prone structures whereas steel structures are 60% lesser in weight through they can withstand earthquake more effectively than the concrete structures.Aim of the study to compare the seismic performance of G+6 and G+9 frames for both steel and RCC. For current study all frames are analyzed under equivalent static method. In this comparative study it is concluded that steel frames are most effective than the concrete as it has the highest strength to weight ratio.

Pushover Analysis of G+15 Steel and Steel-Concrete Composite Frame Structure

Reinforced concrete construction is normally preferred for low-rise buildings. However, for medium to highrise buildings, they are no longer economical due to increased dead load, span restriction, and hazardous formwork. In the present work the attempt has been made to compare Steel and RCC-steel composite frame structure when they are subjected to similar lateral loading by nonlinear static pushover analysis in which it compares performance of G+ 15 storey for steel and composite (steel-concrete) when earthquake load incrementally increases on the structure. Both steel and Steelconcrete composite construction has gained wide acceptance worldwide as an alternative to pure steel and pure concrete construction. Composite construction combines the best of both steel and concrete along with lesser cost, speedy construction, fire protection etc. whereas steel has high strength to weight ratio. It is observed that the performance of steel structure is on higher side than that of the steel concrete composite frame structure. This study focuses on how steel frame structure can be veteran and most economical over the RCC at its seismic performance.

Prof. Bhutekar S. B.
M. E. (Structures)
Lecturer

Stabilization of Black Cotton Soil by Using Steel Slag

In modern days, the disposal problem of industrial waste is rapidly increasing. Such, hazardous waste is affecting the environment as well as land. To protect the land and environment from industrial waste we utilized that waste for the construction purpose. Currently the world annual production of steel slag is estimated in between range 90-135 million metric tonnes. Therefore steel slag used for stabilizing the black cotton soil and for minimizing the waste. The use of steel slag improves the bearing capacity and the strength of black cotton soil and indirectly it saves the construction cost. Different percentage of 5%, 10%, 15% and 20% steel slag have been used to stabilize the black cotton soil and to verify its suitability for using it as a construction material for road. The steel slag collected from Kalika Steel, Jalna and the black cotton soil collected form Himayatbaugh, Aurangabad. The overall program was conducted in 2 phases. In first phase all necessary test such as Atterberg limit, C.B.R and standard proctor compaction test on plain soil were being performed to analyse the maximum dry density (maximum dry density) and optimum moisture content (Optimum Moisture Content). And in 2 phase the black cotton soil was mixed with 5%, 10%, 15%, 20 % of steel slag.

Prof. More S. A.

Lecturer

Stabilization of Black Cotton Soil by Using Stone Dust and Plastic Glass Strips

Prof. Vaijwade S. M.
Lecturer

The main objective of this study is to investigate the use of waste stone dust and plastic glass strips in geotechnical applications and to evaluate the effects of stone dust and plastic glass strips on optimum moisture content (OMC) and maximum dry density (MDD). Also the effect on CBR value in unsoaked condition. These solid wastes are day by day increasing in India, which is not environmental friendly hence they have to be recycled. Thus, a review is presented to make use of those wastes in soil stabilization The results obtained with varying percentage of stone dust (5%, 10%, 15%, etc) and plastic glass strips (0.5%, 1 %, 1.5%, etc).

Study Of Partial Replacement Of Cement And Fine Aggregate By Stone Dust In Concrete

Prof. Vaijwade S. M.
Lecturer

Concrete is a versatile widely used construction material. Ever since concrete has been accepted as a material for construction, researchers have been trying to improve its quality and enhance its performance. Recent changes in construction industry demand improved durability of structure. For construction the concrete is essential. It contain the natural material as sand .There are research on the partial replacement of the natural sand by the different material as fly ash and any other material which shows the same property. The mix design is use for the casting of the cube and for the partial replacement of the cement and sand with the stone dust is use M25 grade mix design. We are replacing the natural sand with stone dust which is passing through 4.75 mm IS sieve and retained on 90 micron IS sieve with increasing percentage 10%, 20%, 30%, etc. similarly the cement is replacing with stone dust which is passing through IS 90 micron sieve with increasing percentage 5%, 10%, 15%, etc. the stone dust with the various percentages to increase. The strength of the concrete is increase in the percentage of 5%, 10%, 15%. The strength is increase by the 20%.

Prof. Toshniwal S. S.
Lecturer

Social Activity

Departmental Staff and students done the Tree Plantation at Shree Goraksh Vidyalay, Khamgaon on 28.07.2018

Departmental Staff and students done the Donation activity for Kerala Flood Relief on 24.08.2018

Lecture Talks and Workshops conducted by Department Staff

Prof. Bhutekar S. B. has conducted a lecture talk on Road Safety Audit in MIT Polytechnic, Aurangabad on 21.09.2018

Prof. Danish Ali and Prof. Bhutekar S. B. has conducted a lecture talk on Concrete Mix Design in Everest Engineering, Aurangabad on 13.10.2018

Industrial Visits

Visit to Building Under Construction with Second year Students on 30.06.2018

Visit to Ready Mix Concrete Plant with Second year Students on 21.07.2018

Visit to Jayakwadi Dam with Third year Students on 27.08.2018

Visit to Water Treatment Plant, Pharola with Third year Students on 14.09.2018

Visit to Stone Crusher Plant with Second year Students on 12.09.2018

Visit to Road Under Construction with Second year Students on 28.09.2018

Lecture Talk by Professionals

Lecture Talk arranged for Second year students on Electrical and Fire Safety on 20.07.2018

Lecture Talk arranged for Third year students from CEiiT on 29.08.2018

Lecture Talk arranged for Second year students From IGTR on 30.08.2018

Lecture Talk arranged for Second and Third year students on Precast Concrete on 19.09.2018

State Level Technical Paper Presentation Event arranged on 03.09.2018

News Letter Created by Prof. Salve U. L.