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<p>Web:www.eswarcollegeofengg.org</p>	

A.Y 2019-20

Date: 31/07/2020

PROCEEDINGS

As per request received from all faculty members and with the approval of the heads of departments, it has been decided to grant research incentives to faculty members for attending conferences, workshops, and professional membership fees for the academic year 2019-20. The list of faculty members approved for these incentives is enclosed.

[Handwritten Signature]
PRINCIPAL
31/07/20

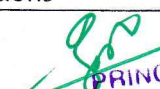
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S.NO	Year	Name of teacher	Name of conference/ workshop attended for which financial support provided	Name of the professional body for which membership fee is provided	Amount of support received (in INR)
			2019-20		
1	2019-20	Dr.V.VENU GOPAL	Challenges & Opportunities in FSW of mg Alloys		5500
2	2019-20	K.L.N. MURTHY	Challenges & Opportunities in FSW of mg Alloys		5000
3	2019-20	R.S.S.RAJU	Challenges & Opportunities in FSW of mg Alloys		5000
4	2019-20	RESHMA BEGUM SHAIK	Challenges & Opportunities in FSW of mg Alloys		5000
5	2019-20	KOTAIAH MASIPOGU	Challenges & Opportunities in FSW of mg Alloys		5000
6	2019-20	S.VANEELA	Challenges & Opportunities in FSW of mg Alloys		5000
7	2019-20	Dr. G. NagaMaleeswara Rao	Vibrational and finite element analyses of TSection cantilever beam using ANSYS and MATLAB		6000
8	2019-20	K.SOWJANYA	Strategies and Employment Opportunities for Faculty and Management Students		5000
9	2019-20	P.BALA JOSEPH	Strategies and Employment Opportunities for Faculty and Management Students		5000
10	2019-20	M.ANITHA	Strategies and Employment Opportunities for Faculty and Management Students		5000
11	2019-20	Dr.VEMULAKONDA. POTHU RAJU	Strategies and Employment Opportunities for Faculty and Management Students		5500
12	2019-20	Dr. R. MURUGESAN	Strategies and Employment Opportunities for Faculty and Management Students		5500
13	2019-20	Dr. P. VENKAI AH BABU	Strategies and Employment Opportunities for Faculty and Management Students		5500
14	2019-20	Dr. SHAIK MUZEER	Strategies and Employment Opportunities for Faculty and Management Students		5500
15	2019-20	NALLAPATI V.R. BOSE	The role of Industry and Academia in building Institutions and Innovations		5000


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16	2019-20	B LAKSHMIKANTH	The role of Industry and Academia in building Institutions and Innovations	5000
17	2019-20	K.G.B.GOWRI	The role of Industry and Academia in building Institutions and Innovations	5000
18	2019-20	K.P.RAJASREE	The role of Industry and Academia in building Institutions and Innovations	5000
19	2019-20	B.VISWANADHAM	The role of Industry and Academia in building Institutions and Innovations	5000
20	2019-20	Dr.G.NAGA MALLESWARARAO	RECENT ADVANCES IN MECHANICAL ENGINEERING	5500
21	2019-20	RESHMA BEGUM SHAIK	RECENT ADVANCES IN MECHANICAL ENGINEERING	5000
22	2019-20	K.MUSALIAH	RECENT ADVANCES IN MECHANICAL ENGINEERING	5000
23	2019-20	SHAIK CHAND MABHU SUBHANI	RECENT ADVANCES IN MECHANICAL ENGINEERING	5000
24	2019-20	V.MURTHY RAO KOKHALAY	Additive Manufacturing	5000
25	2019-20	T.SAMBA SIVA RAO	Additive Manufacturing	5000
26	2019-20	SK.ABDUL VAHID	Additive Manufacturing	5000
27	2019-20	P.SARDAR	Additive Manufacturing	5000
28	2019-20	P.LENIN BABU	Additive Manufacturing	5000
29	2019-20	P.L.SUNITHA	Preparedness and Fight Against Covid-19	5000
30	2019-20	K.SOWJANYA	Preparedness and Fight Against Covid-19	5000
31	2019-20	P.BALA JOSEPH	Preparedness and Fight Against Covid-19	5000
32	2019-20	M.ANITHA	Preparedness and Fight Against Covid-19	5000
33	2019-20	Dr.VEMULAKONDA. POTHU RAJU	Preparedness and Fight Against Covid-19	5500
34	2019-20	Dr. R. MURUGESAN	Preparedness and Fight Against Covid-19	5500
35	2019-20	Dr. P. VENKAIAH BABU	Preparedness and Fight Against Covid-19	5500


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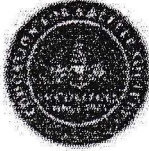
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Vibrational and Finite Element Analyses of T-Section Cantilever Beam using ANSYS and MATLAB

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Abstract A structural member which is acted upon by a system of forces of external loads in perpendicular to it is known as beam. The beam bends whenever a horizontal beam is loaded with vertical loads. The amount with which a beam depends upon the amount and type of the loads, length of the beam and type of the beam. There are several types such as T, HSS and L shaped beams available to meet industrial and domestic applications. The major problems and failures with beams are fatigue failures, vibrations and improper analyses of various properties. This work discusses the effects of vibrations on T-Section Cantilever beam and frequency modes. Hence, to get an in-detail knowledge about T-Section Cantilever beams, the mode shapes and natural frequencies obtained by carrying out vibrational analysis in ANSYS are validated with the results that are obtained by carrying out the finite element analysis using MATLAB. It is found that, the results obtained by MATLAB may be accurate.

Keywords: T-Section Cantilever Beam, ANSYS, MATLAB, Vibrational analysis, Finite Element Analysis, modes shapes, Natural Frequency.

INTRODUCTION

A cantilever beam is a beam whose one end is fixed and another is free. The loads will be placed over the span of the beam. The cantilever carries the load when subjected to a structural load to the support where it is forced against by a moment and shear stress. These types of structures are allowed cantilever construction without external bracing, in contrast to constructions supported at both ends with loads applied between the supports. These are widely found in construction, notably in cantilever bridges and balconies. The T-shaped cross section serves as a flange in resisting compressive stresses.

OBJECTIVE OF THE WORK

- This work focusses on the study of the effect of vibrations on T-Section Cantilever Beam and vibrational analysis is carried out using both ANSYS and MATLAB by giving some free end conditions provided for the beam.
- Three materials, Structural Steel, Mild Steel and Aluminum are taken into consideration in this work and both vibrational and finite element analyses are carried out on those materials.
- The structure's vibration characteristics are determined by using Modal analysis.

METHODOLOGY

Modal analysis of cantilever beam of having length of 2000 mm is studied to determine the natural frequencies and mode shapes by using ANSYS and the results are compared with the results obtained by MATLAB.

For ANSYS, the following steps are performed to carry out this study.

- ❖ Beam Model
- ❖ Specifications of the Beam (The specifications of the beam under study is given in table1.)
- ❖ Modal Analysis with ANSYS Workbench R-15
- ❖ Beam Geometry
- ❖ Mesh Generation
- ❖ Applying Boundary Conditions
- ❖ Solution