

**BRACH: STRUCTURAL ENGG.**  
**IES COLLEGE OF TECHNOLOGY, BHOPAL**

M.E. / M.Tech (1<sup>th</sup> SEM) Assignment -2  
 Advanced Mathematics (MVSE -101)

Date of Assignment: 28.10.2014

Date of Submission: 22/ 11/2014

Note: 1. Question should be written in plain A-4 Size Paper.

2. Minimum 300 Word Limit for each Question.

3. Assignment will submit in stick file.

Q.1	Convert the differentiate equation : $y''(x) - 3y'(x) + 2y(x) = 5 \sin x, y(0) = 1, y'(0) = - 2$ Into an integral equation	june., 2012
Q.2	Solve the poisons equation $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = -10(x^2 + y^2 + 10)$ Over the square with sides $x=0$ , $y=0$ , $x=3$ , $y=3$ with $u(x,0)=0$ on the boundary and mesh length =1	dec. ,2013
Q.3	Find the solution of two- dimensional heat equation.	June, 2011
Q.4	Solve the elliptic equation $u_{xx} + u_{yy} = 0$ for the following square mesh with boundary values as shown: <div style="text-align: center;"> </div>	jun., 2012
Q.5	Solve the euters equation for : $\int_{x_0}^{x_1} (1 + x^2 y') y' dx.$	jun., 2012

**IES COLLEGE OF TECHNOLOGY, BHOPAL**  
M. TECH . (1<sup>ST</sup> SEM) Assignment -2  
**MVSE –102 Strength of material and theory of elasticity (Unit-1 to 5)**

**Date of Assignment: 28.10.2014**

**Date of Submission: 22/ 11/2014**

**Note: 1. Minimum 300 Word Limit for each Question.**

**2. Diagram should be neat and clean.**

Q.1	In 2-d problem , derive the following :  (1) Compatibility equation (2) Differential equation	5 Dec 2010
Q.2	Derive the equation of equilibrium in polar co-ordinate ?	5 Dec 2010
Q.3	Describe isotropy , continuity and homogeneity ?	5 Mar 2008
Q.4	Establish differential equation for a small rectangular block subjected to $\sigma_x, \sigma_y$ and $\tau_{xy}$ at centre for a 2-d problem	5 Mar 2009
Q.5	What do you mean by plain stress and plain strain? What are the advantages of reducing 3d problem to 2d ?	5 Mar 2009

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M. TECH. (1<sup>ST</sup> SEM) Assignment -2

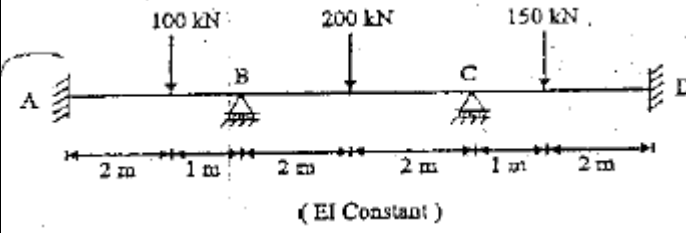
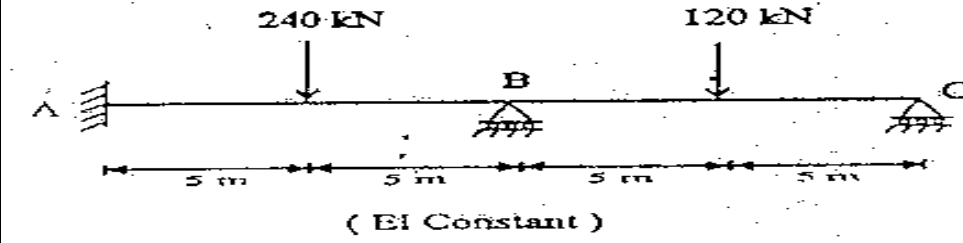
MVS E – 103 Advance Structural Analyses

Date of Assignment: 28.10.2014

Date of Submission: 22/ 11/2014

Note: 1. Minimum 300 Word Limit for each Question.

2. Diagram should be neat and clean.

Q.1	<p>Explain matrix method? Write advantages and disadvantages too? [RGTU 2009]</p>	5
Q.2	<p>Define static and kinematic indeterminacy? And differentiate too? [RGTU 2011]</p>	5
Q.3	 <p style="text-align: center;">(EI Constant)</p> <p>Analyse the beam by stiffness method.</p>	5 MAR 2009
Q.4	 <p style="text-align: center;">(EI Constant)</p> <p>Analyse the beam by flexibility method consider fixed end moments at A and vertical reaction at B as redundant</p>	5 MAR 2009

# IES COLLEGE OF TECHNOLOGY, BHOPAL

M. TECH. (1<sup>ST</sup> SEM) Assignment -2

## MVSE – 104 Design of concrete structures

Date of Assignment: 28.10.2014

Date of Submission: 22/ 11/2014

Note: 1.Minimum 300 Word Limit for each Question.

2. Diagram should be neat and clean.

Q.1	Define design of bridge decks? Explain types of decks?[RGTU:2006]	5
Q.2	Compute the max bending moment for a solid slab bridge for IRC CLASS AA tracked vehicle loadings for the following data :  1. Clear span = 10 m, 2. Clear width of road way = 6m, 3. Avg. thickness of wearing coat = 60m , 4. Width of bearing = 600m	5
Q.3	What do you mean by ductility of building ? [RGTU 2011,13]	5
Q.4	Define seismic waves ? What is seismic waves types ? [RGTU :2007,08]	5

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M. TECH. (1<sup>ST</sup> SEM) Assignment -2

## MVS E – 105 Computer aided design

Date of Assignment: 28.10.2014

Date of Submission: 22/ 11/2014

Note: 1.Minimum 300 Word Limit for each Question.

2. Diagram should be neat and clean.

Q.1	What do you mean array?. [RGTU 2008,9,10,13]	5
Q.2	Define CAD and types of CAD in detail? [RGTU 2012]	5
Q.3	What do you object oriented programming system? [RGTU 2013]	5
Q.4	What are the different types of Cad software's? [RGTU 2012],13	5