# BRACH: STRUCTURAL ENGG.
# IES COLLEGE OF TECHNOLOGY, BHOPAL
### M.E. / M.Tech (1th SEM) Assignment -1
### Advanced Mathematics (MVSE -101)
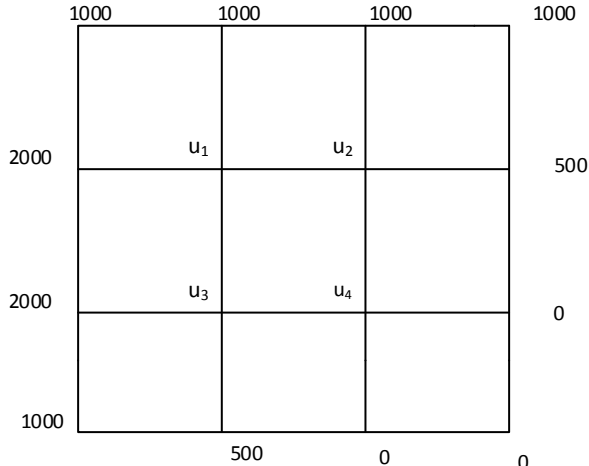
**Date of Assignment: 18/09/14**          **Date of Submission: 17/10/2014**

**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 | Using method of separation of variables, solve: $$\frac{\partial u}{\partial x} = 2\frac{\partial u}{\partial x} + u$$ where, $u(x, 0) = 6e^{-3x}$ | Mar., 2010 |
| Q.2 | Define binomial distribution. The probability the pen manufactured by a company will be defective is $\frac{1}{10}$. If 12 such pens are manufactured, find the probability that <br> a. Exactly two will be defective <br> b. At least two will be defective <br> c. None will be defective. | Mar. ,2010 |
| 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:  | Dec., 2010 |
| Q.5 | Find the Fourier transform of : $$f(x) = \begin{cases} 1 \ for \ |x| < 1 \\ 0 \ for \ |x| > 1 \end{cases}$$ Hence evaluate: $$\int_0^\infty \frac{\sin x}{x} dx$$ | Mar., 2010 |

# IES COLLEGE OF TECHNOLOGY, BHOPAL
## M. TECH . ($^{1ST}$ SEM) Assignment -1
### MVSE –102 Strength of material and theory of elasticity (Unit-1 to 5)

**.   Date of Assignment: 18/09/14**                    **Date of Submission:17/10/2014**

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

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

| | | |
|---|---|---|
| Q.1 | What do you mean by plain stress and plain strain? **[RGTU 2009]** | 5 |
| Q.2 | What is Saint-Pennant's Principle? Explain the Advantage and application of this principle? **[RGTU 2012]** | 5 |
| Q.3 | Write short note on Principal stress and strain? Differentiate also between stress and strain? **[RGTU 2011],12** | 5 |
| Q.4 | What is torsion? Explain in detail. **[RGTU 2010]** | 5 |
| Q.5 | What do you mean by plain stress and plain strain? Explain | 5 |

# IES COLLEGE OF TECHNOLOGY, BHOPAL
## M. TECH. ($^{1ST}$ SEM) Assignment -1
### MVS E – 103 Advance Structural Analyses

**Date of Assignment: 18/09/14**                    **Date of Submission:17/10/2014**

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

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

| | | |
|---|---|---|
| Q.1 | Explain matrix method? Write advantages and disadvantages too? **[RGTU 2009]** | 5 |
| Q.2 | Define flexible and stiffness method? And differentiate too? **[RGTU 2011]** | 5 |
| Q.3 | What do you mean by Symmetrical & anti-symmetrical problems? What the various properties of it. **[RGTU 2012]** | 5 |
| Q.4 | What do you mean by deflection? Define types of beam too in detail? **[RGTU 2013]** | 5 |

# IES COLLEGE OF TECHNOLOGY, BHOPAL
M. TECH. (<sup>1ST</sup> SEM) Assignment -1
## MVS E – 104 Design of concrete structures

Date of Assignment: 18/09/14                     Date of Submission:17/10/2014

**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 | What do you mean by prestressed concrete? What are the various advantages of  and properties of  prestressed concrete? **2008** | 5 |
| Q.3 | What do you mean by foundation? Define all types of foundation in detail? **[RGTU 2011,13]** | 5 |
| Q.4 | Define earthquake? What is plate tectonics? **[RGTU :2007,08]** | 5 |

# IES COLLEGE OF TECHNOLOGY, BHOPAL
M. TECH. (<sup>1ST</sup> SEM) Assignment -1
## MVS E – 105 Computer aided design

Date of Assignment: 18/09/14                     Date of Submission:17/10/2014

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

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

| | | |
|---|---|---|
| Q.1 | What do you mean by OOP? Describe OOP with their types.  [RGTU **2008,9,10,13**] | 5 |
| Q.2 | Define CAD and types of CAD in detail? **[RGTU 2012]** | 5 |
| Q.3 | What do you mean by 3-D modeling? **[RGTU 2013]** | 5 |
| Q.4 | What are the different types of Cad software's? **[RGTU 2012],13** | 5 |