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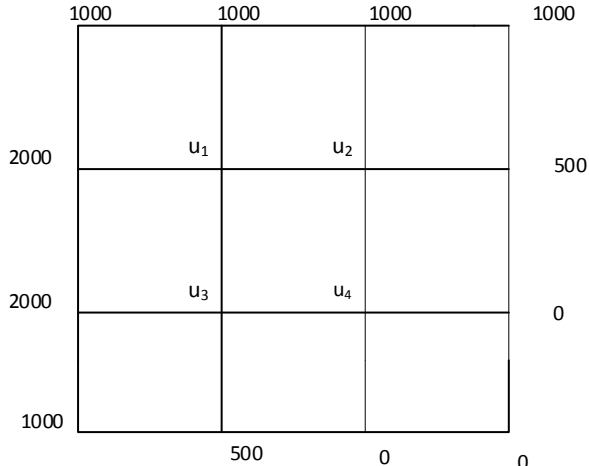
Date of Assignment: 18/09/14   **Date of Submission: 17/10/2014**

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 a. Exactly two will be defective b. At least two will be defective 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

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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. (^{1ST} 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. (^{1ST} 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