IES COLLEGE OF TECHNOLOGY, BHOPAL

M.E. M.TECH (1st SEM) ASSIGNMENT-2

ADVANCE MATHEMATICS

(MMMD-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	Define concepts of queuing models (M/M/1: Infinity/ Infinity/ FC FS)	
Q.2	concepts of queuing models (M/M/S: Infinity/ Infinity/ FC FS)	
Q.3	Explain Solution of Partial Differential Equation (PDE) by separation of variable method.	
Q.4	Define Euler Lagrange's equation.	
Q.5	Define finite elements method for one dimensional problems.	

IES COLLEGE OF TECHNOLOGY, BHOPAL

M.E./ M.Tech (1st SEM) Assignment -2

MMTP –102 Thermodynamics and Combustion)

Date of Assignment:**27/10/2014** **Date of Submission:22/11/2014**

Note: 1.Question should be written in plain A-4 Size Paper(one side only).

2. Minimum 300 Word Limit for each Question.

3. Assignment will submit in stick file.

Q.1	Explain the properties of real substance.	
Q.2	Explain the Concept of classical thermodynamics.	
Q.3	Discuss in brief Phase and reaction equilibriums	
Q.4	Discuss about the Vanderwal's equation of state	
Q.5	Discuss about Laminar and turbulent flames with figures	

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M.E./ M.Tech. (1st SEM) Assignment -2

MMTP – 103 Heat and Mass Transfer

Date of Assignment:**27/10/2014** **Date of Submission:22/11/2014**

Note: 1.Question should be written in plain A-4 Size Paper(one side only).

2. Minimum 300 Word Limit for each Question.

3. Assignment will submit in stick file.

Q.1	Define Steady state conduction with figure.	
Q.2	Define Governing Equations in Laminar & Turbulent Flow.	
Q.3	Explain Radiation exchange between plane and curved surface.	
Q.4	Define equation for convective mass transfer.	
Q.5	Explain pool boiling and empirical correlations for pool boiling heat transfer.	

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M.E./ M.Tech (1st SEM) Assignment -2

ADVANCED FLUID MECHANICS (MMTP-104)

Date of Assignment:**27/10/2014** **Date of Submission:22/11/2014**

Note: 1.Question should be written in plain A-4 Size Paper(one side only).

2. Minimum 300 Word Limit for each Question.

3. Assignment will submit in stick file.

Q.1	Explain the Newton's law of viscosity? what are the effect of temperature on viscosity of water and that of water?	
Q.2	define the term kinematics and kinetics of fluid ?	
Q.3	Differentiated between the term (i) Rotational and Irrotational flow (ii) Steady and unsteady?	
Q.4	Define the concept of Continuum in fluid?	
Q.5	What is the Superposition of elementary flows?	

IES COLLEGE OF TECHNOLOGY, BHOPAL

M.E. M.TECH (1st SEM) Assignment -2

I C ENGINE (MMTP-105)

Date of Assignment: **27/10/2014** **Date of Submission: 22/11/2014**

Note: 1.Question should be written in plain A-4 Size Paper(one side only).

2. Minimum 300 Word Limit for each Question.

3. Assignment will submit in stick file.

Q.1	Define the Term detotion in SI engine normal detotion and abnormal detotion	5
Q.2	Define the Term supercharging in the IC engine with figure	5
Q.3	Define the principle involved in the measurement of brake power?	5
Q.4	classify and explain the IC engine losses	5
Q.5	A four cylinder four stroke Si engine has a compression ratio of 10 and bore of 150mm,with the stroke equal to the bore .the volumetric efficiency of each cylinder is equal to the 78%.the engine operate at a speed of 4800prm with an air fuel ratio 15.given thet the calorific value of fuel +45MJ/kg, atmospheric density =1.12 kg/m3 ,mean effective pressure=10bar and mechanical efficiency of the engine =82%,determine the indicated thermal efficiency and brake power?	