



**II SEMESTER M.TECH (DEPARTMENT OF CIVIL ENGINEERING)**  
**END SEMESTER EXAMINATIONS**  
**APRIL / MAY 2019**  
**SUBJECT: ENERGY AND ENVIRONMENT [CIE 5283]**

Date of Exam: **07/05/2019**Time of Exam: **9:00am to 12:00pm**Max. Marks: **50**

**Instructions to Candidates:**

- ❖ Answer ALL the questions & missing data may be suitably assumed
- ❖ Draw diagrams wherever necessary

<b>1A</b>	How Cap and Trade policy is the Only Feasible Way of Cutting Emissions?	<b>5</b>	<b>CO2</b>
<b>1B</b>	Briefly explain the role of 'Kyoto protocol' in combating climate change	<b>5</b>	<b>CO1</b>
<b>2A</b>	Find the <b>Local Apparent Time</b> corresponding to 14:30 IST on March 29th 2018 at Mumbai (19°07'N, 72°51'E). The 'equation of time correction' is -4 minutes. The standard time is based on 82°30'E in India. Also find the <b>declination angle</b> for the same.	<b>4</b>	<b>CO3</b>
<b>2B</b>	Write a note on Heliostat field solar collector.	<b>3</b>	<b>CO3</b>
<b>2C</b>	What are the factors that governs the site selection for wind energy conversion systems	<b>3</b>	<b>CO3</b>
<b>3A</b>	Explain the working of closed cycle ocean thermal energy conversion system. Mention the advantages and disadvantages of OTEC system.	<b>5</b>	<b>CO3</b>
<b>3B</b>	With a neat diagram explain the conversion of biomass by thermochemical method of Pyrolysis.	<b>5</b>	<b>CO3</b>
<b>4A</b>	Briefly explain the working of flash steam power plant and Binary cycle power plant in geothermal energy extraction	<b>4</b>	<b>CO3</b>
<b>4B</b>	Ocean waves on Indian coast had an amplitude of 1.6m with a period 6s measured at surface water 150m deep. Calculate wave velocity, energy density and power density of the wave. Water density = 1000kg/m <sup>3</sup>	<b>3</b>	<b>CO3</b>
<b>4C</b>	Briefly discuss the advantages and disadvantages of hydroelectric power project	<b>3</b>	<b>CO3</b>
<b>5A</b>	How natural gas is formed? How the wet natural gas is treated in Glycol-dehydration and Solid-desiccant dehydration units in order to remove moisture content in it?	<b>5</b>	<b>CO4</b>
<b>5B</b>	How Global warming has become a serious threat for human existence?	<b>5</b>	<b>CO5</b>

Reg. No.										
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