BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION MO/2022)**

CLASS: **B. ARCH** **SEMESTER : III**
BRANCH: **ARCHITECTURE** **SESSION : MO/2022**

SUBJECT: AR201 CLIMATOLOGY

TIME: **03 HOURS** **FULL MARKS: 50**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

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Q.1(a)	What are the different elements that are responsible for the climate of a region?	[2]
Q.1(b)	Define Site Climate, Macro Climate & Micro Climate?	[3]
Q.1(c)	Explain how the below stated factors affect the climate of any site: a) Surrounding Structures, b) Site Greeneries & nearby Water bodies.	[5]
Q.2(a)	Define Green House Effect?	[2]
Q.2(b)	Explain the Heat Exchange Processes through Building Envelope.	[3]
Q.2(c)	Discuss the relationship amongst Comfort Zone and Bioclimatic Chart with necessary sketches.	**[5]**
Q.3(a)	Define the relevance of Sunpath Diagram?	[2]
Q.3(b)	Discuss the functioning of Stack Effect & Venturi Effect regarding effective wind flow in a building.	[3]
Q.3(c)	How can the air flow pattern inside the building can be modified with the opening size, position, attachments etc.?	[5]
Q.4(a)	Define various types of Shading Devices.	[2]
Q.4(b)	What are the steps to be followed to design shading devices for a building?	[3]
Q.4(c)	Explain with necessary sketches the required Climatological Design considerations for designing the building and settlements in Warm Humid Climate?	[5]
Q.5(a)	Define Daylight Factor?	[2]
Q.5(b)	Differentiate between building orientation and building configuration/form.	[3]
Q.5(c)	Explain with necessary sketches the required Climatological Design considerations for controlling the overheating problem in Hot Dry desert climate?	[5]

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