

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

**CLASS: B.ARCH**  
**BRANCH: ARCHITECTURE & PLANNING**

**SEMESTER : VII<sup>th</sup>**  
**SESSION : MO/2023**

**SUBJECT: AR403 ENERGY EFFICIENT ARCHITECTURE**

**TIME: 3 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. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Explain sustainability and the role of energy efficiency architecture in this context?	[5] 1	2
Q.1(b)	Discuss various passive energy conservation techniques and design strategies for hot and dry climate with neat sketches.	[5] 2	3
Q.2(a)	Explain Energy audit and various steps required for detailed Energy Audit.	[5] 3	2
Q.2(b)	Explain visual comfort and its importance in a building and various strategies to enhance it.	[5] 2	1
Q.3(a)	Discuss Solar Energy as the prime renewable energy source which is transformed into other natural energy sources and its use in Building Sector	[5] 2	2
Q.3(b)	Explain various Landscaping strategies which are helpful in Energy conservation discuss with neat sketches.	[5] 4	3
Q.4(a)	Discuss various active solar space heating strategies with neat sketches.	[5] 1	3
Q.4(b)	Write short notes on the following i) Thermosyphon    ii) Line focus collectors    iii) Evacuated tube collector	[5] 4	1
Q.5(a)	What is green Building and discuss various rating systems?	[5] 4	2
Q.5(b)	What are different criteria for LEED NC certification point allocation and discuss any one criterion in detail?	[5] 4	4

:::23/11/2023:::M