

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)

CLASS: B.Arch
BRANCH: Architecture

SEMESTER: Fifth
SESSION: MO/2023

SUBJECT: AR302 BUILDING SERVICES-III (MECH. & FIRE SAFETY)
TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 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

		CO	BL
Q1 (a)	If there are 50 persons working in a hall of a workshop having a volume of 500 cubic meters, what will be the ventilation intensity to achieve desirable minimum rate of fresh air flow of 25 cubic meters per person.	[5] 5	3
Q2 (a)	Explain case of dew formation on cold surfaces, by using concept of relative and saturation humidity.	[2] 2	4
Q2 (b)	Differentiate between unidirectional displacement ventilation and displacement ventilation with the help of neat sketches. Also, discuss the spaces where they will be preferred in operation.	[3] 1	2,5
Q3)	Explain Refrigeration Cycle with the help of neat sketches. Also, discuss its role in heat transfer from one space to another.	[5] 2	4
Q4	Explain process of Summer and winter air conditioning with the help of neat sketch.	[5] 5	2,4
Q5 (a)	Draw neat sketches to illustrate the impact of mechanical ventilation on design of modern public buildings.	[2] 1	1,3
Q5(b)	Discuss the impact of increasing mechanical ventilation demand on global environment.	[3] 2	1,2

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