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

CLASS: B.ARCH **SEMESTER: VI**
BRANCH: ARCHITECTURE **SESSION : SP/2019**

SUBJECT : AR6301 BUILDING SERVICES-IV [MECHANICAL & FIRE SAFETY SERVICES]

TIME: 1.5 HOURS **FULL MARKS: 25**

INSTRUCTIONS:
1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

Q1	(a)	Differentiate between natural ventilation and mechanical ventilation.	[2]
	(b)	Briefly explain the three ways of heat transfer employed by human body?	[3]
Q2	(a)	Define air change. State some of the typical ventilation rates for different conditions of living and work	[2]
	(b)	Write short notes on the following: (i)Dew Point Temperature (DPT) (iv) Relative Humidity (RH) (v) Absolute Humidity	[3]
Q3	(a)	What is wind induced natural ventilation? Explain with the help of ASHRAE equation	[2]
	(b)	Explain general guidelines for an effective natural ventilation	[3]
Q4	(a)	Under what conditions 'humidification' and 'dehumidification' are required for air conditioning	[2]
	(b)	Write the advantages and disadvantages of split portable units.	[3]
Q5		Explain the following types fluid media based air conditioning system *(any one)*, with their advantages disadvantages and suitability criteria: (a) All Air System (b) All Water System	[5]
Q6	(a)	Calculate the 'By Pass Factor' when incoming air temperature is 95^0 F and outgoing air temperature is 80^0 F and the coil temperature is 60^0 F.	[2]
	(b)	Explain the summer air-conditioning system for hot and humid outdoor conditions with proper sketch.	[3]

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