

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.VOC- SEMESTER-II EXAMINATION – SUMMER 2022****Subject Code:21120402****Date:28-07-2022****Subject Name:Design of Air Conditioning Systems****Time:10:30 AM TO 12:30 PM****Total Marks:50****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	<b>Marks</b>
<b>Q.1 (a)</b> Define following psychrometric properties: Dry Bulb Temperature Wet Bulb Temperature Wet Bulb Depression Specific humidity Relative humidity	<b>05</b>
<b>(b)</b> Write a short note on sling psychrometer.	<b>05</b>
<b>Q.2 (a)</b> Give classification of air conditioning system	<b>05</b>
<b>(b)</b> With the help of neat sketch explain package air conditioning system.	<b>05</b>
<b>OR</b>	
<b>(b)</b> Explain central air conditioning system. Also write down advantages and disadvantages of it.	<b>05</b>
<b>Q.3 (a)</b> Explain air water system with its advantages and disadvantages.	<b>05</b>
<b>(b)</b> Explain factors affecting human comfort.	<b>05</b>
<b>OR</b>	
<b>Q.3 (a)</b> Define and explain Effective Temperature,	<b>05</b>
<b>(b)</b> Draw schematic diagram of summer air conditioning system and winter air conditioning system.	<b>05</b>
<b>Q.4 (a)</b> Explain the classification of cooling and heating load.	<b>05</b>
<b>(b)</b> State and explain various heat loads to be considered for cooling load calculation of a typical building.	<b>05</b>
<b>OR</b>	
<b>Q.4 (a)</b> Discuss flywheel effect of building material.	<b>05</b>
<b>(b)</b> Explain sensible heat gain and latent heat gain to air conditioning space.	<b>05</b>
<b>Q.5 (a)</b> Explain load due to air infiltration and ventilation.	<b>05</b>
<b>(b)</b> List down economic factors influencing duct layout and explain any two.	<b>05</b>
<b>OR</b>	
<b>Q.5 (a)</b> Explain the function of duct.	<b>05</b>
<b>(b)</b> Give classification of duct.	<b>05</b>

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