Sea	at No.:	Enrolment No.	
		GUJARAT TECHNOLOGICAL UNIVERSITY	
		ME – SEMESTER III (NEW) – EXAMINATION – WINTER-2016	
Su	ıbiect	Code: 2732105 Date:25/10/201	16
Subject Name: ADVANCED AIR CONDITIONING TECHNOLO			
Time:02:30 pm to 05:00 pm Total Mar		70	
	structio	ons:	
	1. 2. 3. 4.	Figures to the right indicate full marks.	
Q.1	(a) (b)	Define SHF, by-pass factor, contact factor, ADP, RSHF, GSHF, and ESHF. Discuss the factors affecting the human comforts.	07 07
Q.2	(a) (b)	List the criteria for selection of supply air outlets. Explain the factors affecting the selection of air conditioning system. OR	07 07
	(b)	Explain factors affecting performance of cooling tower.	07
Q.3	(a)	Explain the importance of proper air distribution in conditioned space and define ADPI and SDEF	07
	(b)	List different types of air distribution devices and their characteristics. OR	07
Q.3	(a)	Classify evaporative cooling systems. Explain the working principle of indirect evaporative cooling systems	07
	(b)	Describe the principle of an air washer and its practical use.	07
Q.4	(a)	Explain infiltration with reference to cooling load calculation for comfort air conditioning.	07
	(b)	Enlist different methods of duct design. Explain velocity reduction method for duct design.	07
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Q.4	(a)	An air conditioning auditorium is to be maintained at 27°C DBT and 55% RH. The ambient condition is 39°C DBT and 28°C WBT. The total sensible heat load is 120000 kJ/h & the total latent heat load is 45000 kJ/h. 60% of the return air is recirculated and mixed with 40% of makeup air after the cooling coil. The condition of air leaving the coil is 17°C. Find 1) RSHF. 2) Condition of air entering the auditorium. 3) Amount of makeup air. 4) ADP. 5) B.F of cooling coil.	07
	(b)	Explain briefly the procedure for estimating cooling loads.	07
Q.5	(a) (b)	Compare the characteristics of forward, backward and radial bladed fans. Discuss all water systems system with its advantage & disadvantage. OR	07 07
Q.5	(a)	Write a short note on "Cold storage".	07
٧.٠	(b)	State the types of filter. Explain any one in detail.	07
