English Medium

TECHNICAL SUPERVISOR / ASSISTANT ENGINEER
Electrical Syllabus

Basic Electrical	**10**
Voltage	
Current	
Power factor	
Frequency	
Star-Delta wiring	
Two-way wiring	
Industrial wiring	
Residental wiring	
Electricity duty	
FPPA Chargess	
TOU Charges	
NTCT Charges	
Demand Management (DSM)	
Electricity act 2003	
Tariff types / Consumer categories	
Harmonics	
Diversity factor	
Corona effect	
Skin Effect	
Voltage regulations	
Seris and parallel connections	
Transformers	**5**
Functions	
Classification	
Type (Step up / Step down)	
Applications	
Cooling methods (Air cooled / Oil cooled)	
Protection System	
Oil BDV	
Function of Breather	
Type tests	
Efficiency with respect to loading	
Electrical Motors	**5**
Types	
Functions	
Starting methods	
Type tests	
Efficient motors,	
% Slip	
Type of Losses	
Insulation	
Starting torque	
crawling and clogging	
Synhronous speed	

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Streetlights and Illumination	**20**
Type of Lamps CRI LM 79/80 How to measure Lux (Nine-point method), Class of Road as per NLC Uniformity Efficacy Type of Luminaries Operating methods Saving in Streetlight LED and its function LED control methods Type of Exterior lighting application	
Renewable Energy	**10**
Definition Examples of RE Advantages TCo2 calculation S&F regulation **Solar-** Solar power policy Banking charges Capacity restrictions APPC rate for sale of electricity Net / Gross metering CUF Type of modules Wattages Islanding of inverter Remote monitoring system Strcture material and strength requirment MPPT Area required for installation **Wind -** CUF Capacity Its working principle Types of WTG Speed of wind required for WTG Power equation UTM Yawing **Hydrogen Energy -** Hydrogen production methods Hydrogen types Hydrogen storage Hydrogen transportation	

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MECHANICAL SYLLABUS

Pumps	**15**
Function	
Classification of Pumps	
Working principles	
Pumps Characteristics	
It's Applications	
Priming	
Types	
Head	
Flow	
Components	
Measurement of Efficiency	
Affinity Law	
NPSH	
cavitations	
HVAC	**5**
Fundamentals and scope of HVAC	
Function	
Classification of Air-Conditioning System	
Mode of Heat Transfer	
Component of AC	
Efficiency	
Types of Air conditioning	
Type of Refrigerant	
STP & SPS	**10**
Type	
STP Process	
Function	
Capacity (MLD)	
COD	
BOD	
TSS	
PH	
SPS Operation	
Sludge Treatment and Disposal	
WTP and WDS	**15**
Types	
Function	
Capacity (MLD)	
Turbidity	
ESR	
Aeration	
Sedimenation	
Coagulation and flocculation	
Disinfection Methods	
NET ZERO AND CLIMATE RESILLIANCE	**5**
Ahmedabad city action plan	
Target	
Sectors to select	
Total	**100**