GOVERNMENT POLYTECHNIC, BARGARH

Department Of Electrical Engineering

Semester: 3RD. DIPLOMA — Session: (WINTER)

Subject: Renewable Energy Power Plant — No of Period : 45 (3p/week)

Branch: Electrical Engineering — Name of Faculty: NITESH KU. ACHARYA

Week	Period	Topics to be covered
1st Week	1	Solar PV and Concentrated Solar Power Plants-Introduction
	2	Solar Map of India
	3	Global solar power radiation
2nd Week	4	Solar PV
	5	Concentrated Solar Power (CSP) plants
	6	construction and working of Power Tower
3rd Week	7	Parabolic Trough, Parabolic Dish
	8	Fresnel Reflectors
	9	Solar Photovoltaic (PV) power plant: components layout
4th Week	10	Solar Photovoltaic (PV) power plant-construction, working.
	11	Roof top solar PV power system
	12	Overall discussion of Solar plant
5th Week	13	Wind Map of India
	14	Wind power density in watts per square meter Lift and drag principle
	15	long path theory
6th Week	16	Geared type wind power plants: components, layout and working
	17	Direct drive type wind power plants: components, layout and working
	18	Direct drive type wind power plants: components, layout and working
7th Week	19	Constant Speed Electric Generators
	20	Squirrel Cage Induction Generators(SCIG)
	21	Wound Rotor Induction Generator (WRIG)

8th Week	22	Variable Speed Electric Generators: Doubly-fed induction generator (DFIG)
	23	wound rotor synchronous generator (WRSG)
	24	permanent magnet synchronous generator (PMSG)
9th Week	25	Horizon axis small wind turbine: direct drive type
	26	components and working Horizontal axis small wind turbine
	27	geared type, components and working
10th Week	28	Vertical axis small wind turbine
	29	direct drive and geared, components and Working Types of towers
	30	installation of small wind turbines on rooftops and open fields.
11th Week	31	Electric generators used in small wind power plants
	32	Electric generators used in small wind power plants
	33	Overall discussion of wind power plants
12th Week	34	Properties of solid fuel for biomass power plants: bagasse
	35	Properties of solid fuel for biomass power plants: wood chips, rice husk, municipal waste
	36	Properties of liquid and gaseous fuel for biomass power plants: Jatropha
13th Week	37	Properties of liquid and gaseous fuel for biomass power plants: biodiesel gobar gas
	38	Layout of a Bio-chemical based (e.g. biogas) power plant
	39	Layout of a Bio-chemical based (e.g. biogas) power plant
14th Week	40	Layout of a Thermo-chemical based (e.g. Municipal waste) power plant
	41	Layout of a Thermo-chemical based (e.g. Municipal waste) power plant
	42	Layout of a Agro-chemical based (e.g.bio-diesel) power plant
15th week	43	Layout of a Agro-chemical based (e.g.bio-diesel) power plant
	44	Previous year question discussion
	45	Previous year question discussion