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SARDAR VALLABHBHAI PATEL EDUCATION SOCIETY
MANAGED

N. G. PATEL POLYTECHNIC

ELECTRICAL ENGINEERING DEPARTMENT

ASSIGNMENTS

Course Name (With Code): ENERGY CONSERVATION & AUDIT(4360903)

Semester / Year: Six/Third

Assignment Number: 1

Assignment CO Number:4360903.1

Sr. No.	Questions related to Course Outcomes
Part – A	**Questions carrying 3 Marks**
1	Explain principles of energy management.
2	What is energy conservation act?
3	Describe different approaches of energy managements.
4	State the advantages of energy conservation.
5	Explain energy star concept
Part – B	**Questions carrying 4 Marks**
1	Write different approaches of energy management.
2	Explain energy problems in India.
3	Explain energy conservation in transport sector.
4	Explain good lighting practice.
5	Explain scope of energy conservations in agriculture sector
Part – C	**Questions carrying 7 Marks**
1	Explain the scope of energy conservation in different sector.
2	Explain elements of energy management
3	State how the energy conservation can be done in refrigerator and air conditioner.
4	Explain energy conservation act. and its mandatory provisions.

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ASSIGNMENTS

Course Name (With Code): ENERGY CONSERVATION & AUDIT(4360903)

Semester / Year: Six/Third

Assignment Number: 2

Assignment CO Number:4360903.2

Sr. No.	Questions related to Course Outcomes
Part – A	**Questions carrying 3 Marks**
1	Explain method of energy conservations in electric furnace and oven.
2	Define power factor and explain causes of low power factor.
3	State and explain steps for improving efficiency of motor.
4	State the Advantages of amorphous transformers.
5	How synchronous motor is used for power factor improvement.
Part – B	**Questions carrying 4 Marks**
1	Compare static capacitor with synchronous motor with reference to power factor improvement.
2	What is effect of low power factor on the system?
3	Explain energy conservation using energy efficient light sources.
4	Comparison between Conventional Transformer and Energy Efficient Transformers.
5	Explain how energy conservation is done by use of variable speed drive.
Part – C	**Questions carrying 7 Marks**
1	Three phase 440 V, 50 Hz, 500 HP induction motor is operated on full load at 0.8 lagging power factor. The full load efficiency of motor is 80 %. With help of delta connected capacitor bank the power factor of motor improves from 0.8 to 0.95 lagging. Find rating of capacitor by considering constant KW of load.
2	State condition for most economical power factor.
3	Explain calculation of capacitor for power factor improvement and its two methods of improving power factor using capacitor.

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Course Name (With Code): ENERGY CONSERVATION & AUDIT(4360903)

Semester / Year: Six/Third

Assignment Number: 3

Assignment CO Number:4360903.3

Sr. No.	Questions related to Course Outcomes
Part – A	**Questions carrying 3 Marks**
1	State the method of economic analysis and explain pay- back period.
2	State and explain various cost of project.
3	List methods for finding depreciation. Explain any one method.
4	Describe modes of economic analysis.
5	Define: Pay-back period, ROI and depreciation cost.
Part – B	**Questions carrying 4 Marks**
1	In energy audit project initial investment is Rs 15, 75,000 and its salvage value is Rs 5, 75,000 after 10 years. If annual income of plant is Rs 2, 00,000 then calculate pay-back period.
2	The initial capital investment of an energy project is Rs. 875000/-. Its salvage value is 125000/- after 8 years. If annual income of plant is 245000/- and the operating cost is 90000/-. Calculate (1) ROI (2) Payback period.
3	Explain Sinking fund method for finding depreciation cost.
4	What is Risk analysis?
5	Explain Pay-back period and ROI.
Part – C	**Questions carrying 7 Marks**
1	The initial cost of the equipment is Rs.600000/- and its useful life is 20 years .if the salvage value of the equipment is Rs.40000/-.calculate the depreciation charges by (1) straight line method (2) sinking fund method. Consider the compound interest at the rate of 8% for sinking fund method.
2	Initial cost of equipment is Rs 9, 00,000 and its salvage value is Rs 90,000 after 20 years. Calculate annual depreciation charges by (1) straight line method (2) sinking fund method. Consider cumulative interest is 8% for sinking fund method
3	The initial cost of equipment is Rs. 500000/- and its useful life is 20 years. If the salvage value of the equipment is Rs.20000/-, calculate the depreciation charges by (1) the straight line method, (2) sinking fund method. Consider compound interest of 8% for sinking fund

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ELECTRICAL ENGINEERING DEPARTMENT

ASSIGNMENTS

Course Name (With Code): ENERGY CONSERVATION & AUDIT(4360903)

Semester / Year: Six/Third

Assignment Number: 4

Assignment CO Number:4360903.4

Sr. No.	Questions related to Course Outcomes
Part – A	**Questions carrying 3 Marks**
1	Explain combined cycle power plant with line diagram.
2	Explain remedies for reducing transmission losses.
3	State advantages of co-generation plant.
4	Explain how restructuring of tariff helps in improving energy conservation.
5	Write sort note on small hydro power plant.
Part – B	**Questions carrying 4 Marks**
1	What is demand side management? Explain methods to improve the energy conservation regarding load factor.
2	State different types of tariff and explain any one of it.
3	Explain how to control Maximum demand.
4	State the method to carryout theft of electricity & how it is prevented?
5	How energy conservation can be done in boiler?
Part – C	**Questions carrying 7 Marks**
1	Explain the causes of high transmission and distribution losses.
2	State the measures taken to improve the working of existing power plant.
3	Make the suggestion for conservation of energy in boiler, furnace and pump.
4	Draw line diagram of combined cycle power plant and explain its working. Write advantages of combined cycle power plant.

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Course Name (With Code): ENERGY CONSERVATION & AUDIT(4360903)

Semester / Year: Six/Third

Assignment Number: 5

Assignment CO Number:4360903.5

Sr. No.	Questions related to Course Outcomes
Part – A	**Questions carrying 3 Marks**
1	Explain importance of energy audit in energy conservation technique.
2	What is energy audit? State element of energy audit.
3	State the benefits of energy audit.
4	Write the tools of energy audit.
5	Draw energy flow diagram.
Part – B	**Questions carrying 4 Marks**
1	Compare preliminary and detail energy audit.
2	Explain the preliminary energy audit.
3	Explain the detailed energy audit.
4	What electrical data obtained in detailed energy audit?
5	Explain energy audit and state the main function of energy audit.
Part – C	**Questions carrying 7 Marks**
1	Explain energy audit reporting and remedial measure.
2	State the procedure to carry out energy audit of three phase transformer.
3	State the procedure to carry out energy audit of three phase induction motor.
4	State the roles and responsibilities of energy auditor.

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