




GOVERNMENT POLYTECHNIC, KORAPUT
DEPARTMENT OF MECHANICAL ENGINEERING

| | | |
|---|---|--|
| Discipline: MECHANICAL ENGG | Semester: 6TH | Name of the Teaching Faculty: M. KRISHNA RAO |
| Subject: POWER STATION ENGINEERING | No. of days/per week class allotted: 4 | Semester From date: 20/4/21 To Date: 03/8/21 No. of Weeks: |
| COURSE OUTCOMES | CO1: UNDERSTAND GENERATION OF POWER BY VARIOUS ENERGY SOURCES. CO2: UNDERSTAND USE OF STEAM, OPERATION IN THERMAL POWER STATION. CO3: UNDERSTAND NUCLEAR ENERGY SOURCES & POWER DEVELOPED. CO4: UNDERSTAND DIESEL ELECTRIC & HYDROELECTRIC POWER STATION. CO5: UNDERSTAND THE BASICS OF GAS TURBINE POWER STATION. | |
| Week | Class Day | Theory/Practical Topics |
| 1ST | 1ST | DESCRIBE SOURCES OF ENERGY. |
| | 2ND | CENTRAL & CAPTIVE POWER STATION, CLASSIFY POWER PLANTS. |
| | 3RD | IMPORTANCE OF ELECTRICITY IN DAY-TO-DAY LIFE. |
| | 4TH | DESCRIBE METHOD OF ELECTRICAL POWER GENERATION |
| 2ND | 1ST | QUIZ & ASSIGNMENT - I |
| | 2ND | LAYOUT OF STEAM POWER STATION. |
| | 3RD | STEAM POWER CYCLE: CARNOT VAPOUR POWER CYCLE (CVPC) |
| | 4TH | CVPC WITH P-V & T-S DIAGRAM & THERMAL EFFICIENCY (CON..) |
| 3RD | 1ST | RANKINE CYCLE WITH P-V, T-S & H-s DIAGRAM, WORK DONE |
| | 2ND | RANKINE CYCLE: WORK RATIO, THERMAL EFFICIENCY, SPECIFIC STEAM CONSUMPTION (CONTD...) |
| | 3RD | RANKINE CYCLE NUMERICALS (CONTD...) |
| | 4TH | LIST OF THERMAL POWER STATIONS IN THE STATE. |
| 4TH | 1ST | BOILER: OPERATION OF AIR PRE-HEATER, ECONOMISER |
| | 2ND | BOILER: ELECTROSTATIC PRECIPITATOR, SUPER HEATER (CONTD..) |
| | 3RD | NEED OF BOILER MOUNTINGS & OPERATION OF BOILER. (CONTD..) |
| | 4TH | DRAUGHT SYSTEMS: NATURAL, FORCED, BALANCED |
| 5TH | 1ST | DRAUGHT SYSTEMS: ADVANTAGES & DISADVANTAGES (CONTD..) |
| | 2ND | STEAM TURBINE: ELEMENTS, ADV. & DISADV, PERFORMANCE |
| | 3RD | STEAM TURBINE: GOVERNING, THERMAL EFFICIENCY, STAGE EFFICIENCY, GROSS EFFICIENCY (CONTD..) |
| | 4TH | STEAM CONDENSER: CLASSIFICATION, FUNCTION. |
| 6TH | 1ST | FUNCTION OF CONDENSER AUXILIARIES SUCH AS HOT WELL |
| | 2ND | EXTRACTION PUMP: CONDENSER, CIRCULATING, AIR EXTRACTION |
| | 3RD | COOLING TOWER: FUNCTION, TYPES; SPRAY PONDS. |
| | 4TH | SELECTION OF SITE FOR THERMAL POWER STATIONS. |
| 7TH | 1ST | QUIZ & ASSIGNMENT - II |
| | 2ND | CLASSIFY NUCLEAR FUEL (FISSILE & FERTILE MATERIAL) |
| | 3RD | EXPLAIN FUSION & FISSION REACTION |
| | 4TH | WORKING OF NUCLEAR POWER PLANT WITH BLOCK DIAGRAM. |
| 8TH | 1ST | NUCLEAR POWER PLANT BLOCK DIAGRAM (CONTD..) |
| | 2ND | WORKING & CONSTRUCTION OF NUCLEAR REACTOR. |
| | 3RD | COMPARE NUCLEAR & THERMAL POWER PLANTS. |

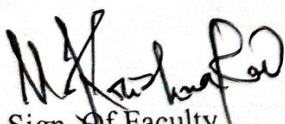
UNDERSTAND THE P
THE

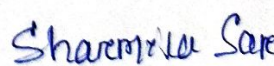


| | | |
|------------------|-----------------|--|
| | 4 TH | EXPLAIN THE DISPOSAL OF NUCLEAR WASTE. |
| 9 TH | 1 ST | SELECTION OF SITE FOR NUCLEAR POWER STATION. |
| | 2 ND | LISTS OF NUCLEAR POWER STATION IN THE STATE. |
| | 3 RD | QUIZ & ASSIGNMENT - III |
| | 4 TH | DIESEL ELECTRIC POWER STATION: ADVANTAGES |
| 10 TH | 1 ST | DIESEL ELECTRIC POWER STATION: DISADVANTAGES (CONTD..) |
| | 2 ND | DIFFERENT SYSTEMS OF DIESEL ELECTRIC POWER STATIONS |
| | 3 RD | FUEL STORAGE, FUEL SUPPLY SYSTEM, FUEL INJECTION SYSTEM. |
| | 4 TH | AIR SUPPLY, EXHAUST, COOLING, LUBRICATION, STARTING, GOVERNING SYSTEM. (CONTD...) |
| 11 TH | 1 ST | SELECTION OF SITE FOR DIESEL ELECTRIC POWER STATION. |
| | 2 ND | PERFORMANCE OF DIESEL ELECTRIC POWER STATION. |
| | 3 RD | EFFICIENCY OF DIESEL ELECTRIC POWER STATION. |
| | 4 TH | REVISION |
| 12 TH | 1 ST | QUIZ & ASSIGNMENT - IV |
| | 2 ND | HYDROELECTRIC POWER PLANT: ADV. & DISADV. |
| | 3 RD | CLASSIFY & EXPLAIN THE GENERAL ARRANGEMENT OF STORAGE TYPE HYDROELECTRIC POWER PLANT (STHPP) |
| | 4 TH | OPERATION OF STORAGE TYPE HYDROELECTRIC PLANT (CONTD..) |
| 13 TH | 1 ST | SELECTION OF SITE FOR HYDROELECTRIC POWER PLANT. |
| | 2 ND | LIST OF HYDROPOWER STATIONS: CAPACITIES & NO. IN STATE. |
| | 3 RD | TYPES OF TURBINES & GENERATIONS USED |
| | 4 TH | TYPES OF TURBINES & GENERATIONS USED (CONTD...) |
| 14 TH | 1 ST | SIMPLE NUMERICALS. |
| | 2 ND | SIMPLE NUMERICALS. |
| | 3 RD | QUIZ & ASSIGNMENT - V |
| | 4 TH | SELECTION OF SITE FOR GAS TURBINE STATIONS. |
| 15 TH | 1 ST | FUELS FOR GAS TURBINE. |
| | 2 ND | ELEMENTS OF SIMPLE GAS TURBINE POWER PLANTS. |
| | 3 RD | MERITS, DEMERITS & APPLICATIONS OF GAS TURBINE PLANTS. |
| | 4 TH | QUIZ & ASSIGNMENT - VI |

LEARNING RESOURCES:

POWER PLANT ENGINEERING, R.K RAJPUT, LAXMI PUBLICATION.
 POWER PLANT ENGINEERING, P.K NAG, TMH PUBLICATION.
 POWER PLANT ENGINEERING, G.R NAGPAL, KHANNA PUBLISHER.
 POWER PLANT ENGINEERING, P.C SHARMA, S.K KATARIA & SONS PUBLICATIONS.


 Sign. Of Faculty
 concerned


 Sign. Of HOD / C


 Principal