

| Lesson Plan | | | |
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| | Discipline:Electrical Engineering | Semester-6th Summer 2023 SEC-B | Name of the Teaching Faculty: Sri BISWAJIT SAHOO |
| Sl. No. | Subject:..TESTING AND MAINTENANCE OF ELECTRICAL MACHINE | No. Of Days/Week class allotted:05 | Semester From date: 14/02/2023 To date: 23/05/2023. No of weeks: 15 |
| | Weeks/Months | Class Day | Topic |
| 1 | 1st Week | 1st(14.02.2023) | Installation, Commissioning and Testing of Machine: 1.1. Inspection of arrival of machine and inspection procedure before its installation |
| | | 2nd(16.02.2023) | 1.2. Generalized procedure of installation of Electrical machines |
| | | 3rd(16.02.2023) | 1.3. Electric wiring for motors and switch gears. |
| 2 | 2nd Week | 1st(17.02.2023) | 1.4. General requirement for Electric Installation according to Indian Electricity rules |
| | | 2nd(20.02.2023) | 1.5. Necessity of starters and relays for both DC and AC machines |
| | | 3rd(21.02.2023) | 1.6. Testing before giving supply and testing repor |
| | | 4th(23.02.2023) | 2. Installation, Commissioning and Testing of Transformer: 2. 1 Basic idea on dispatch, inspection, storage and handling of transformer. |
| 3 | 3rd Week | 1st(23.02.2023) | 2. 2 Civil construction feature regarding connection like ventilation, noise level, space for free movemen |
| | | 2nd(24.02.2023) | 2. 3 Foundation and drainage of oil. |
| | | 3rd(27.02.2023) | 2. 4 Cabling and cable box for transformer |
| | | 4th(06.03.2023) | 2. 5 Provision for fire protection. |
| | | 5th(09.03.2023) | 2. 6 Provision for bushing support location of switch gear |
| 4 | 4th Week | 1st(09.03.2023) | 2. 7 Steps for commissioning fitting of all accessories |
| | | 2nd(10.03.2023) | 2. 8 Filling of oil, drying out. 2. 9 Charging the breather with fresh silica gel |
| | | 3rd(13.03.2023) | 2. 10 Cleaning of bushing, fixing of conductor & cables, earthing of tank and cover, neutral earthing |
| 5 | 5th Week | 1st(14.03.2023) | 2. 11 Fixing of protection circuits and setting of relays. |
| | | 2nd(16.03.2023) | 3. Installation, Commissioning & Testing of Sub-station. 3 . 1 Design and planning of indoor substation. |
| | | 3rd(16.03.2023) | 3 . 2 General requirement of layout of indoor substation with key diagr |
| | | 4th(17.03.2023) | 3 . 3 Consideration of safe operation of substation |
| | | 5th(20.03.2023) | 3 . 4 Installation of outdoor substation |
| 6 | 6th Week | 1st(20.03.2023) | 3.4.1 Selection of site, transport & receipt of transformer, checking of insulation resistance of the winding, testing of transformer oil, protection fittings, construction of mounting, earthing arrangement and final commissioning |
| | | 2nd(21.03.2023) | 3 . 5 Testing and commissioning of substation. 3.5.1. Installation of control and relay panels |
| | | 3rd(23.03.2023) | 3 . 5 Testing and commissioning of substation. 3.5.1. Installation of control and relay panels |
| | | 4th(23.03.2023) | 3.5.2. Preliminary preparation. |
| 7 | 7th Week | 1st(24.03.2023) | 3.5.3. Sequence card for erection of switch gear equipments |
| | | 2nd(27.03.2023) | 3.5.4. Location of place 3.5.5. Unpacking |
| | | 3rd(28.03.2023) | 3.5.6. Foundation |
| 8 | 8th Week | 1st(31.03.2023) | 3.5.7. Erection |
| | | 2nd(03.04.2023) | 3.5.8. Relays |
| | | 3rd(04.04.2023) | 3 . 6 Bus-bar earthing connection, Earthing. 3.6.1. Connection to main cable |

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| 9 | 9th Week | 1st(06.04.2023) | 3.6.2. Safety precaution |
| | | 2nd(06.04.2023) | 3 . 7 Installation of outdoor circuit breaker: 3.7.1. Receipt and storage |
| | | 3rd(10.04.2023) | 3.7.2. Civil works |
| | | 4th(11.04.2023) | 3.7.3. Various steps for installation |
| 10 | 10th Week | 1st(13.04.2023) | 3 . 8 Pre-commissioning tests. |
| | | 2nd(17.04.2023) | 4. Maintenance: 4.1 Fundamental of maintenance. |
| | | 3rd(18.04.2023) | 4. Maintenance: 4.1 Fundamental of maintenance. |
| | | 4th(20.04.2023) | 4.2 Preventive maintenance and planning |
| 11 | 11th Week | 1st(21.04.2023) | 4.2 Preventive maintenance and planning |
| | | 2nd(24.04.2023) | [Daily, Weekly, Monthly, Half-yearly and Yearly maintenance.] |
| | | 3rd(25.04.2023) | [Daily, Weekly, Monthly, Half-yearly and Yearly maintenance.] |
| | | 4th(27.04.2023) | 4.3 Advantages of Preventive maintenance: |
| | | 5th(27.04.2023) | 4.3 Advantages of Preventive maintenance: |
| 12 | 12th Week | 1st(28.04.2023) | protection fittings, construction of mounting, earthing arrangement and final commissioning |
| | | 2nd(01.05.2023) | protection fittings, construction of mounting, earthing arrangement and final commissioning |
| | | 3rd(02.05.2023) | 4.4 Breakdown maintenance: |
| | | 4th(04.05.2023) | List of tools / instruments and materials used for maintenance. |
| 13 | 13th Week | 1st(08.05.2023) | List of tools / instruments and materials used for maintenance. |
| | | 2nd(09.05.2023) | 4.5 Making or Preparing Maintenance schedule of DC machines, |
| | | 3rd(11.05.2023) | 4.5 Making or Preparing Maintenance schedule of DC machines, |
| | | 4th(11.05.2023) | Induction machines, Synchronous machines, Transformer, Transmission line, |
| 14 | 14th week | 1st(12.05.2023) | Induction machines, Synchronous machines, Transformer, Transmission line, |
| | | 2nd(15.05.2023) | Distribution lines |
| | | 3rd(16.05.2023) | Underground cables |
| | | 4th(18.05.2023) | Circuit breakers |
| 15 | 15th week | 1st (22.05.2023) | Switch gear and protective relays and substations |
| | | 2nd(23.05.2023) | SF-6 circuit breakers, Batteries in substation |

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