Assignment : 4

Objectives: To understand

a. Component of LT Switchgear.
b. Working of various switches.
c. Electrical earthing.

1. Explain LT switchgear and discuss various components used in LT panels.
2. Explain construction, working and applications of SFU.
3. Explain MCB, MCCB and ELCB with comparison table.
4. Explain earthing system in detail with types and advantages.
5. Discuss the importance of earthing for human safety and equipment protection.
6. Explain electrical safety precautions for domestic and industrial appliances.
7. Describe safety measures to prevent electrical accidents.
8. Explain role of protective devices in electrical systems.
9. An SFU of rating 63 A supplies a load drawing 45 A. Find: Percentage loading and Remaining capacity
10. The resistance of an earth electrode is 5 Ω. If fault current is 10 A, find the voltage rise.
11. Two earth electrodes each of resistance 8 Ω are connected in parallel. Find total resistance.

Rubric wise marks obtained:

Criteria	Level of Knowledge and Understanding	Analytical Ability	Quality & Correctness of Write-up, Ethical Practices and Submission	Total
Marks				

Assignment : 5

Objectives: To understand

a. Types of lamp
b. Illumination schemes
c. Batteries
d. Electrical measuring instruments
e. Calculation of electricity bill

1. Explain various types of lamps such as incandescent, fluorescent, CFL, LED and sodium vapour lamps.
2. Discuss illumination schemes and recommended lighting levels for different premises.
3. Explain construction and characteristics of lead-acid and lithium-ion batteries.
4. Explain battery charging and discharging process with curve.
5. Explain calculation of electricity bill for a domestic consumer with example.
6. Explain working principle and circuit connections of electrical measuring instruments.
7. Compare ammeter, voltmeter, wattmeter and energy meter.
8. Explain importance of proper illumination in industrial and commercial areas.
9. A household uses a 1000 W microwave for 30 minutes daily, a 60 W fan for 8 hours, and five 10 W LED bulbs for 5 hours each. Calculate the total daily energy consumption in kWh. If the tariff is Rs. 0.15 per kWh, find the monthly bill for 30 days.
10. An air conditioner rated at 1.5 kW operates for 6 hours daily with a power factor of 0.8. Calculate the monthly energy consumption in kWh for 30 days and the bill at Rs. 0.12/kWh, including a fixed charge of Rs.10.
11. In a series circuit, an ammeter reads 5 A connected to a 230 V supply with a resistive load. If a voltmeter across the load shows 220 V, calculate the circuit resistance and power.

Rubric wise marks obtained:

Criteria	Level of Knowledge and Understanding	Analytical Ability	Quality & Correctness of Write-up, Ethical Practices and Submission	Total
Marks				