

# MIZORAM PUBLIC SERVICE COMMISSION

## DEPARTMENTAL EXAMINATIONS FOR JUNIOR GRADE OF M.E.S. (AE/SDO) UNDER POWER & ELECTRICITY DEPARTMENT, SEPTEMBER, 2018.

### ELECTRICAL ENGINEERING PAPER – I (WITHOUT BOOKS)

Time Allowed : 3 hours

FM : 100 PM : 40

*The figures in the margin indicate full marks for the questions.  
Attempt all questions.*

1. Draw layout diagram of Small Hydro Electric Generation plant with neat sketch showing main components and explain in brief each of the equipment. (10)
2. What are the advantages and disadvantages of Hydro Generation plant over Thermal based Generation Plant? (10)
3. What are various types of testing of transformer Oil? Explain each method briefly. (10)
4. What are the main electrical equipments normally found in EHV Sub-Station? Explain each role & functions briefly. (10)
5. What is T&D Losses? What are the measures to be adopted to reduce T&D loss in the distribution system? (10)
6. Define (a) Circuit Breaker, (b) ACSR, (c) Skin effect, (d) Corona (10)
7. Design for installation of 100kVA, 11/04kV DT Sub-Station including LT distribution line, metering system with their associated equipment. (10)
8. Explain the importance of good earthing in the electrical system. Define the working principle of Earth resistance tester. (10)
9. What instruments are required to measure (a) Power, (b) Consumption of electric energy? Explain the working principle for each of them. (10)
10. Draw single line diagram for E.H.V. Sub-Station indicating all main electrical equipment for 132 kV/33kV Sub-Station like CT, PT, LA, Isolator, CB with the following parameters (10)
  - (a) 1 no of Power Transformer 15.5 MVA
  - (b) 1 no of incoming feeder
  - (c) 4 nos of 33kV out going feeders

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