

November 2022

*Time – Three hours*  
*(Maximum Marks: 100)*

- [N.B. 1. Answer all questions under Part-A each question carries 3 marks.  
2. Answer all the questions either (A) or (B) in Part-B each question carries 14 marks.]

PART – A

1. Write about choice of site for locating a hydro power plant.
2. Name the supplementary fuels used in co-generation plants.
3. State the advantages of high transmission voltage.
4. What is Span? State the factors affecting it.
5. State the advantages of Glass insulators.
6. List the disadvantages of UG cables.
7. Define short time rating.
8. Classify fuses.
9. Classify relays based on timing characteristics.
10. Classify relays based on function.

[Turn over.....

PART - B

11. (a) Draw the schematic of a Hydro power plant and explain,  
(Or)  
(b) Draw the schematic of a Nuclear Reactor, Explain.
12. (a) Draw and explain typical AC power supply scheme,  
(Or)  
(b) Derive expression for sag for supports at equal level, with a sketch.
13. (a) Draw and explain UPFC FACTS Controller with a block diagram.  
(Or)  
(b) Derive an expression for voltages across a string of three suspension Insulators. Also define string efficiency.
14. (a) Explain the principle of working of Circuit Breaker with a neat sketch.  
(Or)  
(b) Explain the construction and working of Vacuum Circuit Breaker with a neat sketch.
15. (a) Explain principle of operation of Relay with a diagram.  
(Or)  
(b) Write notes on (i) Instantaneous relay, (ii) Inverse time relay

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