No. of Printed Pages : 2

BIEE-023

B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)

00353

Term-End Examination

June, 2018

BIEE-023 : SWITCHGEAR AND PROTECTION

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***seven*** *questions. All questions carry equal marks.*

1. Highlight the superiority of sulphur hexafluoride as an arc quenching medium. Draw the schematic diagram of a puffer-type SF_6 circuit breaker and explain its working. *10*

2. What is the working principle of a self-generated pressure oil circuit-breaker ? Explain the working of a cross-jet explosion pot used for the same. *10*

3. What are the major difficulties encountered in power systems without neutral grounding ? Obtain an expression for the value of reactance to be connected in the neutral connection to neutralize the capacitance current in case of reactance earthing. *10*

4. Write a brief note on the following : *10*

   (a) Surge Impedance

   (b) Surge Arresters

5. Discuss the role of back-up protection. What are the various methods of giving back-up protection ? *10*

6. Derive the general equation of an electromagnetic relay. Describe the construction and operation of earth fault relay. *10*

7. Explain the principle of circulating current differential protection used for a generator. What are the main difficulties faced in differential protection scheme and how are these difficulties overcome ? *10*

8. Enlist various bus-bar protection schemes. Explain any one in detail. *10*

9. Explain any one scheme for protection of transformers. *10*
