No. of Printed Pages : 2

BIEE-018

B.TECH. ELECTRICAL ENGINEERING (BTELVI)

Term-End Examination

December, 2013

BIEE-018 : HIGH VOLTAGE ENGINEERING

Time : 3 hours *Maximum Marks : 70*

Note : *(i) Answer **any seven** question in all.*

*(ii) All question carry **equal** marks.*

1. Describe with diagrams of a three stage cascade transformer and also define the following terms: 10
   (a) Impulse voltage.
   (b) Chopped wave.
   (c) Impulse flash-over voltage.
   (d) Impulse puncture voltage.
   (e) Impulse ratio for flash over.

2. Describe the principle of operation, construction and application of Marx Circuit for multi stage impulse generators. 10

3. Explain the principle and construction of electrostatic voltmeter for measuring very high voltages. 10

4. Compare the use of uniform field electrode spark gap and sphere gap for measuring peak values of voltages. 10

5. What is a mixed potential devider ? How is it used for impulse voltage measurements ? 10

6. Explain the principle and functioning of 10
   (a) expulsion gaps
   (b) protector tube

7. Explain stremer theory of breakdown in air at atmospheric pressure. 10

8. What is Pastern's law ? How do you account for the minimum voltage for breakdown under a given 'PxD' condition ? 10

9. Briefly explain the methods used for calibrating the partial discharge detectors. 10

10. Mention different electrical tests done on insulators and circuit breaker. 10