

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

Term-End Examination

December, 2016

00653

**BIEEE-013 : POWER QUALITY ISSUES AND
REMEDIAL MEASURES**

Time : 3 hours

Maximum Marks : 70

Note : Attempt any **five** questions. Each question carries equal marks.

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1. (a) What do you understand by Power Quality ? How can it be measured ? 7
 - (b) What are the various factors which affect the power quality ? 7
 2. (a) Define Voltage Sag. Describe in brief the techniques used for prevention of voltage sag. 7
 - (b) What are the various harmonics introducing devices ? Discuss in detail. 7
 3. (a) How do harmonics affect the load and electrical equipments ? 7
 - (b) What is SVC (Static VAR Compensator) ? Explain its working with a suitable diagram. 7

4. (a) How do the compensation techniques improve the power quality of a power system? 7
- (b) What are dynamic voltage restorers? Discuss it in detail for sag and swell of voltages. 7
5. (a) What is 3-phase APFC (Active Power Factor Correction) technique? How does it affect the power quality of the system? 7
- (b) What is the importance of grounding? Explain its various methods. 7
6. (a) Classify the filters needed for harmonic mitigation in power systems. 7
- (b) Discuss the advantages and disadvantages of STATCOM implementation in power systems. 7
7. Write short notes on any **two** of the following: $2 \times 7 = 14$
- (a) Long and Short Interruptions
- (b) 3-phase Converters
- (c) Impedance Scan Analysis
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