

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

Term-End Examination

00576

June, 2016

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

Time : 3 hours

Maximum Marks : 70

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

1. (a) Write the various reasons responsible for poor power quality. 7
- (b) How does voltage sag affect the power quality ? 7
2. (a) Discuss SMPS in detail. How does it affect the power quality ? 7
- (b) How can the harmonics introduced by converters be mitigated ? 7
3. (a) What are short and long interruptions ? Propose a technique to monitor these interruptions. 7
- (b) Draw the single line diagram of STATCOM. Also describe its principle of working. 7

4. (a) What is the significance of power factor in power system ? How can it be improved ? 7
- (b) Differentiate between active and passive compensation techniques. 7
5. (a) What are the advantages and disadvantages of implementing SVC (Static VAR Compensator) in power system ? 7
- (b) Discuss some techniques used for the improvement of power quality in India. 7
6. (a) What is the necessity of grounding ? How can the grounding problems be eliminated ? 7
- (b) Explain the single phase APFC (Active Power Factor Correction) technique. 7
7. Write short notes on any **two** of the following : $2 \times 7 = 14$
- (a) Voltage Restorers for Sag and Swell
- (b) 3-Phase Shunt Active Filters
- (c) Harmonic Resonance
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