

**R18**

Code No: 158CD

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech IV Year II Semester Examinations, July/August-2022**

**POWER QUALITY AND FACTS**

**(Electrical and Electronics Engineering)**

Time: 3 Hours

Max.Marks:75

Answer any five questions

All questions carry equal marks

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- 1.a) Discuss the Power Quality problems in distribution systems.  
b) Explain the following: (i) Unbalance (ii) Sags (iii) Swells and (iv) Interruptions.

[7+8]

2. What are the Wave-form Distortions? Explain them in detail.

[15]

3. Explain the shunt compensation at the mid-point of an AC line.

[15]

4.a) What do you understand by uncompensated A.C transmission lines?

b) State the disadvantages of uncompensated A.C transmission lines.

[7+8]

5. Discuss the working principle of Static Var Compensator. Explain its characteristics.

[15]

6. Explain the basic operating principle of STATCOM and its control approaches and characteristics.

[15]

7.a) Explain the operating principle of TSSC and its control schemes.

b) Discuss the operating principle of SSSC and its Power Angle characteristics.

[8+7]

8. What is Unified Power Flow Controller? Discuss its conventional control capabilities.

[15]

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