



Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

BTECH
(SEM VIII) THEORY EXAMINATION 2021-22
INTRODUCTION TO POWER QUALITY & FACTS

Time: 3 Hours**Total Marks: 70****Notes:**

- Attempt all Sections and Assume any missing data.
- Appropriate marks are allotted to each question, answer accordingly.

SECTION-A	Attempt All of the following Questions in brief	Marks (7X2=14)
Q1(a)	What are the cause of voltage variation?	
Q1(b)	What is voltage sag and swell?	
Q1(c)	Why does voltage drop when starting a motor?	
Q1(d)	How do you prevent voltage from sagging?	
Q1(e)		?
Q1(f)	What are the basic types of FACTS controllers?	
Q1(g)	What is the main cause of harmonic distortion?	

SECTION-B	Attempt ANY THREE of the following Questions	Marks (3X7=21)
Q2(a)	How do short duration interruptions affect the power quality?	
Q2(b)	How do you prevent transients?	
Q2(c)		?
Q2(d)	What is difference between UPFC and UPQC?	
Q2(e)	How can we reduce harmonics in power system?	

SECTION-C	Attempt ANY ONE following Question	Marks (1X7=7)
Q3(a)	What is harmonics explain harmonic distortion with relevant waveforms?	
Q3(b)	What is power frequency variation? How does frequency affect voltage?	

SECTION-C	Attempt ANY ONE following Question	Marks (1X7=7)
Q4(a)		?
Q4(b)	Which transformer transformers can be used for isolation?	

SECTION-C	Attempt ANY ONE following Question	Marks (1X7=7)
Q5(a)	How does a motor behave during its starting operation?	
Q5(b)	What does a capacitor do in power factor correction?	

SECTION-C	Attempt ANY ONE following Question	Marks (1X7=7)
Q6(a)	What are the functions of STATCOM in the improvement of power system performance area?	
Q6(b)	Why FACTS controllers are used? What is the difference between STATCOM and SVC?	

SECTION-C	Attempt ANY ONE following Question	Marks (1X7=7)
Q7(a)	How do you mitigate harmonic distortion?	
Q7(b)	How do harmonics affect transformers?	