

					Pri	inted	l Pa	ge: 1	of 2	
				Sub	ject	Cod	le: ŀ	KOE	084	ŀ
Roll No:										Ì

BTECH (SEM VIII) THEORY EXAMINATION 2021-22 INTRODUCTION TO SMART GRID

Time: 3 Hours Total Marks: 100

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt all questions in brief.

10*2=20

Q.no	Questions	Marks	CO
(a)	What is the need of Smart Meters?	2	2
(b)	Define the term Smart Grid.	2	1
(c)	Discuss about the concept of Smart Grid Technologies.	2	2
(d)	What is the concept of Smart Substations?	2	3
(e)	What do you mean by Self-Healing Grid?	2	1
(f)	What do you mean by Power Quality in Smart Grid?	2	5
(g)	What do you mean by Microgrids?	2	4
(h)	What is the concept of Feeder Automation?	2	3
(i)	What do you mean by Energy Resources?	2	4
(j)	What do you mean by the Power Quality Management?	2	5

SECTION F

2. Attempt any three of the following:

10*3 = 30

Q.no	Questions	Marks	CO
(a)	Describe about the Power Quality issues of Grid connected Renewable	10	5
	Energy Sources.		
(b)	Describe in detail about the Real Time Prizing under the Smart Grid	10	2
	Technologies.		
(c)	Describe about the Intelligent Electronic Devices (IED) and their	10	3
	application for monitoring and protection.		
(d)	Describe in detail about the need and application areas of Microgrids.	10	4
(e)	What is the Concept of Smart Grid? Discuss in detail about the	10	1
	Evolution of Electric Grid.		

SECTION C

3. Attempt any *one* part of the following:

10*1 = 10

Q.no	Questions	Marks	CO
(a)	Discuss in brief about the Power Quality Conditioners for Smart Grid.	10	5
(b)	Discuss about the following:	10	2
	(i) Automatic Meter Reading (AMR)		
	(ii)Outage Management System (OMS)		



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4. Attempt any *one* part of the following:

10 *1	= 10
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Q.no	Questions	Marks	CO
(a)	Discuss in detail about the Opportunities & Barriers of Smart Grid.	10	1
(b)	Discuss about the following:	10	3
	(i) Wide Area Measurement System (WAMS).		
	(ii) Compressed Air Energy Storage.		

5. Attempt any *one* part of the following:

$$10*1 = 10$$

Q.no	Questions	Marks	CO
(a)	Describe in detail about the Protection and control of Microgrids.	10	4
(b)	Discuss in brief about the Web based Power Quality monitoring in	10	5
	Smart Grids.		

6. Attempt any *one* part of the following:

$$10*1 = 10$$

Q.no	Questions	Marks	CO
(a)	Discuss about the following:	10	2
	(i) Plug in Hybrid Electric Vehicles (PHEV).	\mathcal{D} .	
	(ii) Smart Sensors.	X	
(b)	Mention about the difference between conventional and smart grid.	10	1

7. Attempt any *one* part of the following:

10*1 = 10

Q.no	Questions	Marks	CO
(a)	Describe about the PMUs application to monitoring & control of	10	3
	power system.		
(b)	Describe in detail about the concept of Integration of renewable energy	10	4
	sources.		
	09.06.2022		