

K.S. GROUP OF INSTITUTIONS
K.S. SCHOOL OF ENGINEERING & MANAGEMENT

15, Mallasandra, Near Vajarahalli, Off. Kanakapura Road, Bengaluru- 560 109
 www.kssem.edu.in



KSSEM
 K.S. SCHOOL OF ENGINEERING AND MANAGEMENT

BLUE BOOK

Name of the Student: Shobitha Kumar

Class / Sem : VIIth 'B' Branch: E.C.E

USN :

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SUBJECT : Power electronics Subject Code : 15EC73

MAXIMUM MARKS :

Test	I	II	III	Average Marks Obtained
Date	4/9/19	25/10/19	25/10/19	$13+5$ $= 18$
Marks Obtained	11	08	14	
Signature of the Student	<u>Skumar</u>	<u>Skumar</u>	<u>Skumar</u>	<u>Skumar</u>
Initials of Room Supervisor	<u>HR</u>	<u>Jy.</u>	<u>HR</u>	
Initials of Faculty	<u>Vinay R</u>	<u>Vinay R</u>	<u>Vinay R</u>	

rechecked
 (B)

NAME OF FACULTY : VINAY R

SIGNATURE : Vinay R

SIGNATURE OF H.O.D.
 Professor & Head
 Dept. of Electronics & Communication Engineering
 K. S. School of Engineering & Management
 Bangalore-560 109

K S SCHOOL OF ENGINEERING AND MANAGEMENT

First Internal test

Q. No	Marks	CO	Q. No	Marks	CO	CO	Total
1(a)		1	3(a)		1	1	12
1(b)		1	3(b)	3	1		
1(c)		2	3(c)		2	2	10
OR		OR					
2(a)	5	1	4(a)	2	1		
2(b)	5	1	4(b)		1		
2(c)	5	2	4(c)	5	2	Grand Total	22

Second Internal test

Q. No	Marks	CO	Q. No	Marks	CO	CO	Total
1(a)	4	2	3(a)		2	2	4
1(b)	3	3	3(b)		3		
1(c)	0	3	3(c)		3	3	11
OR		OR					
2(a)		2	4(a)	0	2		
2(b)		3	4(b)	4	3		
2(c)		3	4(c)	4	3	Grand Total	15

Third Internal test

Q. No	Marks	CO	Q. No	Marks	CO	CO	Total
1(a)	5	4	3(a)	5	4	4	20
1(b)	5	4	3(b)	5	4		
1(c)	5	5	3(c)	3	5	5	8
OR		OR					
2(a)		4	4(a)		4		
2(b)		4	4(b)		4		
2(c)		5	4(c)		5	Grand Total	28


 Signature of the Staff

- OA is the region where there is no voltage, no devices is turned on.
- AV is the region where we have minimum voltage that can be used to turn on SCR / devices.
- VP is the region where we have maximum voltage, that can be used to turn on all the devices.
- A point 'P' there is high voltage, so o/p is produced mostly & it takes less time.
- There is DC load line.

4(b)

$$i = \frac{V}{R} (1 - e^{-t/\tau})$$

~~$$\tau = \frac{L}{R}$$~~

→ Current
voltage

22
30

6/9/19

2/21/19
5/21/19
8/21/19
4/1/20
0/21/19
3/6/19

$$\left[2 \frac{V_m}{2\pi} ((\pi - 0) - (0 - 0)) \right]^{1/2}$$

$$= \frac{V_m}{\sqrt{2}} (\pi)$$

$$V_o(\text{avg}) = \frac{V_m}{\sqrt{2}}$$

15
30

26/10/19

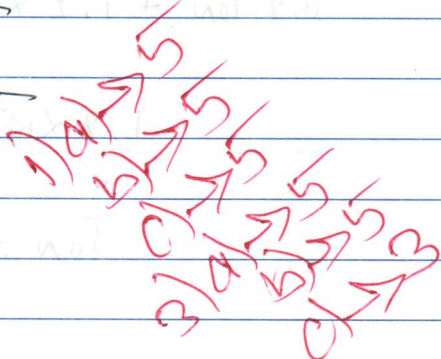
$4 \rightarrow 0$
 $5 \rightarrow 4$
 $6 \rightarrow 4$
 $7 \rightarrow 4$
 $8 \rightarrow 3$
 $9 \rightarrow 0$

$$(iv) \text{ THD} = \frac{\sqrt{V_1^2(\text{rms}) - V_1^2}}{V_1}$$

$$= \frac{\sqrt{V_1^2(\text{rms}) - (21.60)^2}}{21.61}$$

$$= 0.992$$

$$\text{THD} = 99.2\%$$



28/30

26/11/19

$\sigma = \sqrt{\frac{1}{n} \sum (x_i - \bar{x})^2}$

$V_{rms} = \sqrt{\frac{1}{n} \sum V_i^2}$

$\frac{V_{rms}}{V_1} = \frac{\sqrt{\frac{1}{n} \sum V_i^2}}{V_1}$

$\frac{21.60}{21.61} = \frac{\sqrt{\frac{1}{n} \sum V_i^2}}{21.61}$