Ch-1

The mean pow
39.6 A for one

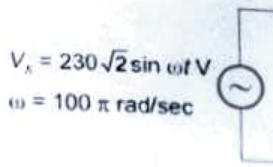
urrent for an SCR, inserted in between
ge source of 200 V and the load, is
mpute the minimum width of gate-
nt required to turn-on this SCR in case
onsists of
2 H
Ω in series with L = 0.2 H
(c) $R = 20\ \Omega$ in series with L = 2.0 H

1. a 2. d 3. b 4.
5. c 6. d 7. c 8. a
9. c 10 b 11 d 12
13 d 14 a 15 d 16 b
17 b 18 2 19 3 20 d
21 213·32 22 c 23 c 24 a
25 c 26 d 27. a 28 a
29 b 30 c 31 a 32 a
33 a 34 b 35 d 36 d
37 d 38 b 39 b 40 a
41 b 42 c 43 c 44 c
45 a 46 a 47 a 48 b
49 b 50 c 51 b 52 c

53 b 54 b 55 b 56 68·34
57 a 58 d 59 d 60 d
61 a 62 d 63 c 64 c
65 d 66 1·51 67 c 68 d
69 b 70 0·66 71 293 72 c
73 68·34 74 6·97 75 a) 0·1 ms
b) 0·1 ms
c) 1 ms

Ch-2

Q.121 In the circuit shown
passing through the



ase dual converter is fed
50 Hz source. The load is
he current limiting reactor has
or $\alpha_1 = 120°$ the peak value of
rrent is ____ A.

■■■■

1 a 2 C 3 C 4 2,3,4
5 a 6 C 7 31% 8 28.36
9 250 10 d 11 d 12 111.83°
13 d 14 C 15 C 16 a
17 484.8V 18 9.27 19 8.76 20 223.79
21 C 22 C 23 d 24 d
25 a 26 C 27 d 28 b
29 a 30 a 31 b 32 a
33 12.5 34 4 35 d 36 -164.9
37 d 38 b 39 C 40 b
41 d 42 57.5 43 C 44 d
45 0.9526 46 a,b,c,d 47 C 48 C
49 d 50 b 51 b 52 C
53 65 54 d 55 a 56 d
57 C 58 C 59 C 60 b
61 d 62 C 63 b 64 a

65 a 66 C 67 a 68 d
69 a 70 C 71 C 72 b
73 147.3° 74 1.66 75 0.096 76 0°
77 b 78 a 79 11.98 80 170V
81 82 19.9 83 C 84 9.55
85 d 86 0.8 87 20 88
89 288.2 90 d 91 d 92 b
93 a 94 57.7° 95 8.33 96 0.876
97 36.85 98 0.985 99 1.3412 100 0.4476
101 30.93 102 a 103 177.12 104 201.4
105 a 106 C 107 b,C 108 C
109 C 110 b 111 20.02 112 9.27
113 0.95 114 b 115 b 116 d
117 d 118 b 119 20 120 C
121 4.96 122

Ch-3

determine :
(a) Duty cycle
(b) Ripple curr
(c) Ripple volt
(d) Peak curre
(e) Critical valu

V. The required average output voltage
5 V at $R = 500\ \Omega$ and the peak-to-peak
ripple voltage is 20 mV. The switching
ncy is 25 kHz. If the peak-to-peak ripple
of inductor is limited to 0.8 A. Determine:
duty cycle k,
filter inductance L, and
(c) the filter capacitor C, and
(d) the critical values of L and C.

■■■■

1 a 2 c 3 0.13 4 d
5 c 6 c 7 c 8 b
9 a 10 56.8 11 9 12 c
13 0.636 14 d 15 b 16 a,c
17 c 18 55 19 a 20 b
21 d 22 a 23 c 24 d
25 d 26 c 27 a 28 a
29 b 30 1 31 d 32 d
33 c 34 c 35 54 36 4.9
37 a 38 d 39 a 40 b
41 2.33 42 a 43 1.875 44 c
45 0.24 46 177.6 47 0.298 48 13.91
49 0.665 50 80%. 51 99%. 52 18.19
53 c 54 b 55 38.47 56 c

57 c 58 a 59 40
60 0.03 61 171.5 62
63

operating in 120° conduction mode. The fundamental component of output line to line voltage is _____ V

1 C 2 d 3 C 4 b
5 121.5 6 0.122 7 C 8 d
9 b 10 d 11 d 12 C
13 d 14 24.54 15 d 16 b
17 208.6 18 31.86 19 1.535 20 750
21 b 22 4 23 a 24 d
25 0.095 26 a 27 d 28 a
29 b 30 C 31 a 32 C
33 a 34 C 35 b 36 b
37 a 38 b 39 18.08 40 C
41 b 42 C 43 b 44 a

45 C 46 a 47 b 48 710.7
49 C 50 b 51 17.33 52 b,c
53 27.58 54 b 55 b 56 60
57 d 58 2.779 59 60 b
61 0.122 62 72.92 63 b 64 C
65 a 66 b 67 121.5 68 710.732
69 C

CH-4

(a) Find the no-load sp
of 30°.

(b) Find the
at rate
the sup
f 2000 rpm
rmine also

(c) Find the speed regulation
firing angle
obtained in part (b).

CH-5

■■■■

1 C 2 1254.2 3 C 4 b 5 0.288
6 2000 7 8 b 9 d 10 C
11 b 12 d 13 a 14 d 15 a
16 C 17 171.5 18 a 19 d 20 d
21 C 22 C 23 b 24 98.68° 25 C

26 27 i) 29.3° 28 i) 65.36°
ii) 120°
iii) 893.89

29 i) 288.6 Rps
ii) 48.27°, 0.6356
iii)