Answer 1:

Conditions	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7
$-∞ <= Balance <= $0.00	Yes						
$0.01 <= Balance <= $1499.99		Yes					
$1500.00 <= Balance <= $5000.00			Yes				
$5000.01 <= Balance <= $9999.99				Yes			
$10,000.00 <= Balance <= $25,000.00					Yes		
$25000.01 <= Balance <= $49,999.99						Yes	
$50,000.00<= Balance <= $∞							Yes
Actions							
Interest	0.00	0.01	0.011	0.0125	0.015	0.02	0.025
Fee	$50.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Gift Card	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE
HONORED STATUS	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE

1. (ii) CFG (Reduced)

(iii) Cyclomatic Complexity = 7.

(iv) Basis Path Set

i	13-14-32
ii	13-16-17-32
iii	13-16-19-20-32
iv	13-16-19-22-23-32
v	13-16-19-22-25-26-32
vi	13-16-19-22-25-28-29-32
vii	13-16-19-22-25-28-31-32

Decision Coverage :- Yes, achieved
Statement Coverage :- yes, achieved
Full boundary Coverage :- Yes, achieved
Extreme coverage :- Yes, achieved

(VI) yes the test cases support the description.

	INPUTS		EXPECTED OUTPUTS		
TESTCASES	Balance	Balance	Gift Card	Honored Status	BASIS PATH
TESTCASE1	$0.00	-$50.00	FALSE	FALSE	13-14-32
TESTCASE2	$1,499.99	$1,514.99	FALSE	FALSE	13-16-17-32
TESTCASE3	$5,000.00	$5,055.00	FALSE	FALSE	13-16-19-20-32
TESTCASE4	$9,999.99	$10,124.99	FALSE	FALSE	13-16-19-22-23-32
TESTCASE5	$25,000.00	$25,375.00	FALSE	FALSE	13-16-19-22-25-26-32
TESTCASE6	$49,999.99	$50,999.99	FALSE	FALSE	13-16-19-22-25-28-29-32
TESTCASE7	$50,000.00	$51,250.00	TRUE	TRUE	13-16-19-22-25-28-31-32
TESTCASE8	$0.01	$0.01	FALSE	FALSE	"-"
TESTCASE9	$1,500.00	$1,516.50	FALSE	FALSE	"-"
TESTCASE10	$5,000.01	$5,062.51	FALSE	FALSE	"-"
TESTCASE11	$10,000.00	$10,150.00	FALSE	FALSE	"-"
TESTCASE12	$25,000.01	$25,500.01	FALSE	FALSE	"-"
TESTCASE13	$100,000.00	$102,500.00	TRUE	TRUE	"-"
TESTCASE14	-$30.00	-$80.00	FALSE	FALSE	"-"

Answer 2:

Condition	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5
CRUISE ENGAGED	NO	YES	YES	YES	YES
0.0 feet <= Distance <= 49.9 feet	Yes				
50.0 feet <= Distance <= 75.0 feet		Yes			
75.1 feet <= Distance <= 149.9 feet			Yes		
150.0 feet <= Distance <= 500.0 feet				Yes	
500.1 feet <= Distance <= 2000.00 feet					Yes
Actions					
Red Light	TRUE	TRUE	TRUE		
Yellow Light			TRUE	TRUE	
Green Light					TRUE

② (ii)   CFG (Reduced)
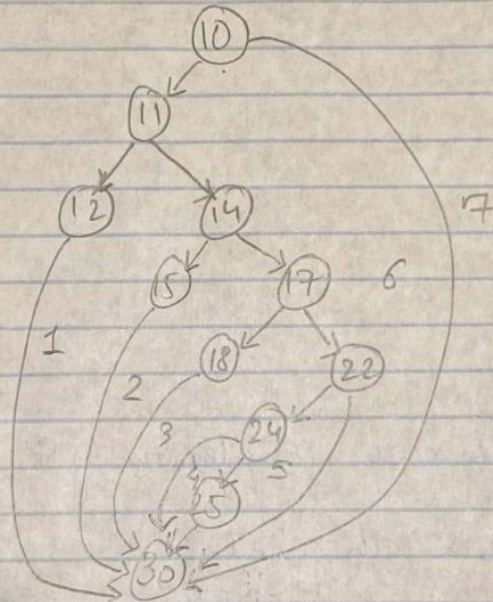
(iii) Cyclomatic Complexity = 7.
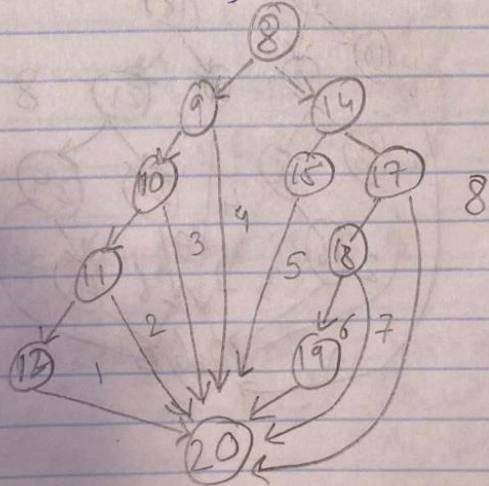
(iv) Basis Path :-

(i)   10 - 11 - 12 - 30
(ii) 10 - 30

iii   10 - 11 - 14 - 15 - 30

iv   10 - 11 - 14 - 17 - 18 - 30

V   10 - 11 - 14 - 17 - 22 - 24 - 25 - 30

Vi   10 - 11 - 14 - 17 - 22 - 30

Vii   10 - 11 - 14 - 17 - 22 - 24 - 30

(V) Decision Coverage :— Yes, achieved
    Statement   "   :— Yes, achieved
    Full Boundary "   :— Yes, achieved
    Extreme   "   :— Yes, achieved.

(Vi) Yes, the test case supports the description.
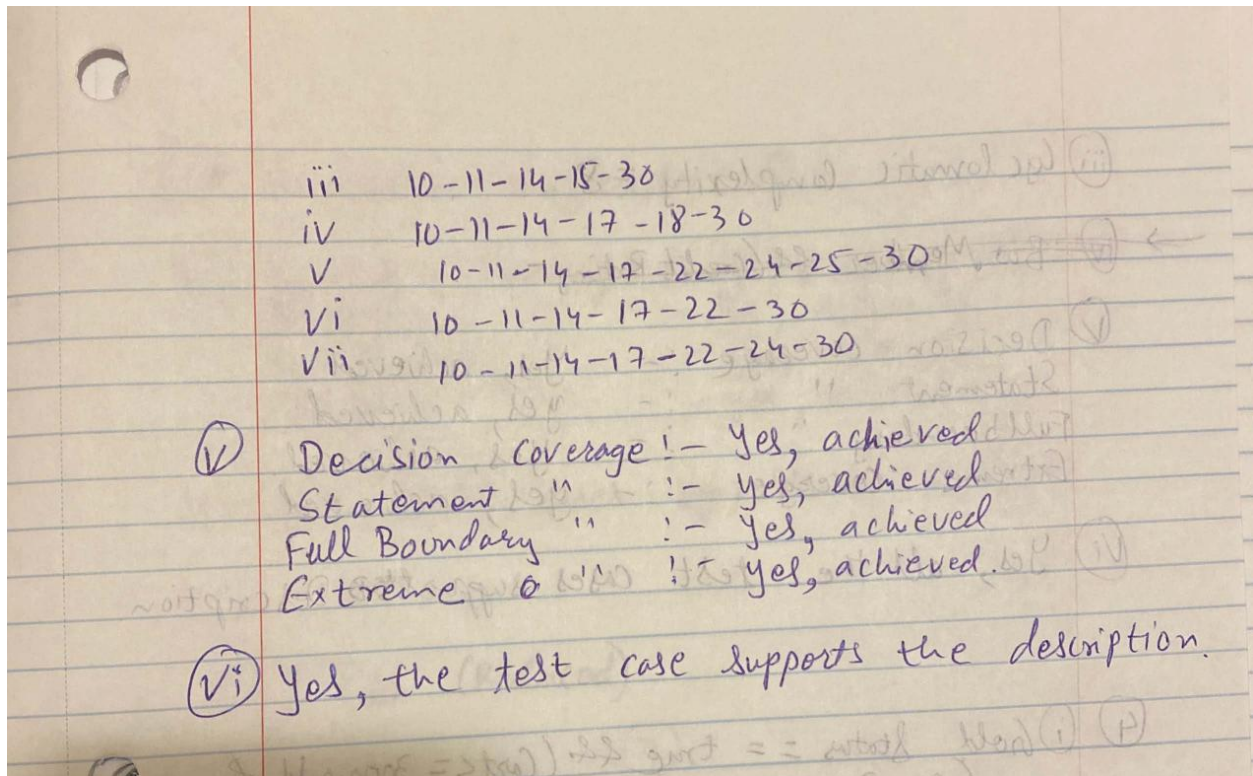
	INPUTS				EXPECTED OUTPUTS			
Test Cases	Cruise Engaged	Distance	Timer	Red Light	Yellow Light	Green Light	Timer	BASIS PATH
TESTCASE1	TRUE	500.1	0	FALSE	FALSE	TRUE	0	10,11,12,30
TESTCASE2	FALSE	500.1	0	FALSE	FALSE	FALSE	0	10,30
TESTCASE3	TRUE	150.0	0	FALSE	TRUE	FALSE	0	10,11,14,15,30
TESTCASE4	TRUE	75.1	0	TRUE	TRUE	FALSE	0	10,11,14,17,18,30
TESTCASE5	TRUE	49.9	1	FALSE	FALSE	FALSE	0	10,11,14,17,22,24,25,30
TESTCASE6	TRUE	50.0	1	TRUE	FALSE	FALSE	0	10,11,14,17,22,30
TESTCASE7	TRUE	49.9	0	TRUE	FALSE	FALSE	1	10,11,14,17,22,24,30
TESTCASE8	TRUE	500.0	0	FALSE	TRUE	FALSE	0	-
TESTCASE9	TRUE	149.9	0	TRUE	TRUE	FALSE	0	-
TESTCASE10	TRUE	75.0	0	FALSE	FALSE	FALSE	0	-
TESTCASE11	TRUE	0.0	0	TRUE	FALSE	FALSE	0	-
TESTCASE12	TRUE	2000.0	0	FALSE	FALSE	TRUE	0	-

Answer 3:

③ ⓘ Member = true && (Credit Rating >= 650
&& Cart <= 5000.0 && Cart > 2500.0) ||
(Credit Rating >= 700 || (Cart <= 3500.0 &&
Cart > 1500.0)).

ⓘⓘ CFG (Reduced)

ⓘⓥ Basis Path:-
ⓘ   8 - 9 - 10 - 11 - 12 - 20
ⓘⓘ   8 - 14 - 15 - 20
ⓘⓘⓘ   8 - 9 - 20
ⓘⓥ   8 - 14 - 17 - 18 - 19 - 20
ⓥ   8 - 9 - 10 - 20
ⓥⓘ   8 - 14 - 17 - 20
ⓥⓘⓘ   8 - 9 - 10 - 11 - 20
ⓥⓘⓘⓘ   8 - 14 - 17 - 18 - 20

(iii) Cyclomatic Complexity = 8

→ (iv) B/w Member && Credit Rating -

(v) Decision Coverage :- Yes, achieved
Statement " :- Yes, achieved
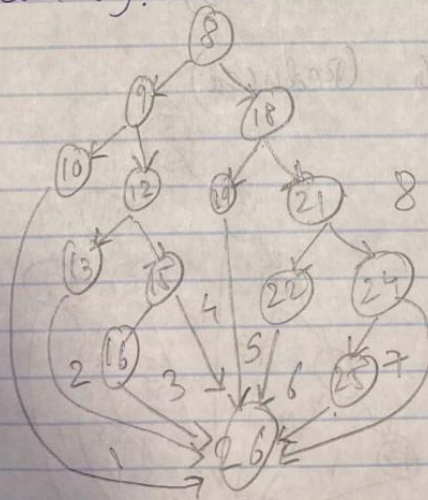Full boundary " :- Yes, achieved.
Extreme Coverage :- Yes, achieved

(vi) Yes, all the test cases support SB Description.

Test Cases	INPUTS			EXPECTED OUTPUTS	
	Member	Credit Rating	Cart	APPROVED	BASIS PATH
TESTCASE1	TRUE	650	$2,500.01	TRUE	8-9-10-11-12-20
TESTCASE2	FALSE	700	$1,500.01	TRUE	8-14-15-20
TESTCASE3	TRUE	649	$2,500.01	FALSE	8-9-20
TESTCASE4	FALSE	699	$1,500.01	TRUE	8-14-17-18-19-20
TESTCASE5	TRUE	650	$5,000.01	FALSE	8-9-10-20
TESTCASE6	FALSE	699	$3,500.01	FALSE	8-14-17-20
TESTCASE7	TRUE	650	$2,500.00	FALSE	8-9-10-11-20
TESTCASE8	FALSE	699	$1,500.00	FALSE	8-14-17-18-20
TESTCASE9	TRUE	650	$5,000.00	TRUE	-
TESTCASE10	FALSE	699	$3,500.00	TRUE	-
TESTCASE11	TRUE	650	$0.00	FALSE	-
TESTCASE12	TRUE	650	$10,000.00	FALSE	-
TESTCASE13	TRUE	0	$5,000.00	FALSE	-
TESTCASE14	FALSE	850	$5,000.00	TRUE	-

Answer 4:

④ ⅰ Gold Status == true && (Cost <= 3000.0 ||
(Cart Rating >= 700 || years member >5)) ||
(Cart <= 2000.0 || (Credit Rating >= 750 || years member
>7)).

ⅱ CFG (Reduced).

ⅳ Basis Path :-

    ⅰ   8 - 9 - 10 - 26

    ⅱ   8 - 18 - 19 - 26

    ⅲ   8 - 9 - 12 - 13 - 26

    ⅳ   8 - 18 - 21 - 22 - 26

    ⅴ   8 - 9 - 12 - 15 - 16 - 26

    ⅵ   8 - 18 → 21 - 24 - 25 - 26

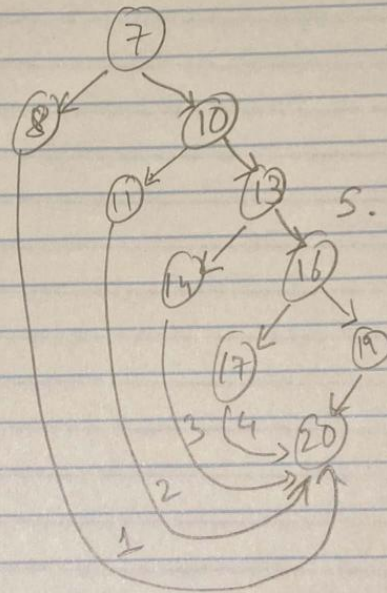   ⅶ   8 - 9 - 12 - 15 - 26

    ⅷ   8 - 18 - 21 - 24 - 26.

(iii) Cyclomatic Complexity = 8.

(iv) Decision Coverage :- Yes, achieved
Statement " :- Yes, achieved
Full Boundary " :- Yes, achieved
Extreme " :- Yes, achieved

(vi) Yes, test cases supports description

			INPUTS		EXPECTED OUTPUTS	
TESTCASES	Gold Status	Cart	Credit Rating	Years Member	Approved	BASIS PATH
TESTCASE1	TRUE	$3,000.00	699	5	TRUE	8,9,10,26
TESTCASE2	FALSE	$2,000.00	749	7	TRUE	8,18,19,26
TESTCASE3	TRUE	$3,000.01	700	5	TRUE	8,9,12,13,26
TESTCASE4	FALSE	$2,000.01	750	7	TRUE	8,18,21,22,26
TESTCASE5	TRUE	$3,000.01	699	6	TRUE	8,9,12,15,16,26
TESTCASE6	FALSE	$2,000.01	749	8	TRUE	8,18,21,24,25,26
TESTCASE7	TRUE	$3,000.01	699	6	FALSE	8,9,12,15,26
TESTCASE8	FALSE	$2,000.01	749	7	FALSE	8,18,21,24,26
TESTCASE9	TRUE	$0.00	699	5	TRUE	-
TESTCASE10	TRUE	$10,000.00	699	5	FALSE	-
TESTCASE11	TRUE	$3,000.01	0	5	FALSE	-
TESTCASE12	TRUE	$3,000.01	850	5	TRUE	-
TESTCASE13	TRUE	$3,000.01	699	0	FALSE	-
TESTCASE14	TRUE	$3,000.01	699	20	TRUE	-

Answer 5:
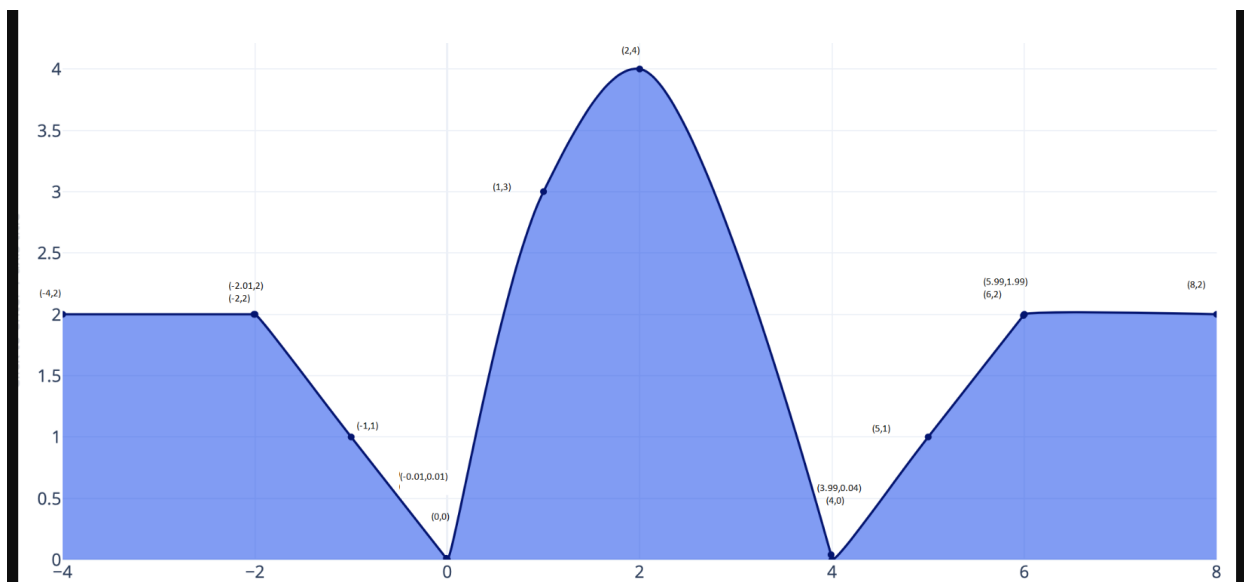
⑤ (ii) CFG (Reduced)

(iii) Cyclomatic complexcity = 5.

(iv) Basis Path :-
- i 7-8-20.
- ii 7-10-11-20
- iii 7-10-13-14-20
- iv 7-10-13-16-17-20
- v 7-10-13-18-19-20
- vi
- vii

(v) Decision Coverage :- Yes, achieved
Statement " ;- " "
FullBoundary " ;- " "
Extreme " :- " "

(vi) B Yes, the test cases support Descriptions.

	INPUTS	OUTPUTS	
TESTCASES	x	y	BASIS PATH
TESTCASE1	-2.01	2.00	7,8,20
TESTCASE2	-0.01	0.01	7,10,11,20
TESTCASE3	3.99	0.04	7,10,13,14,20
TESTCASE4	5.99	1.99	7,10,13,16,17,20
TESTCASE5	6.00	2.00	7,10,13,16,19,20
TESTCASE6	-2.00	2.00	-
TESTCASE7	0.00	0.00	-
TESTCASE8	4.00	0.00	-
TESTCASE9	-4.00	2.00	-
TESTCASE10	8.00	2.00	-
TESTCASE11	-1.00	1.00	-
TESTCASE12	2.00	4.00	-
TESTCASE13	1.00	3.00	-
TESTCASE14	5.00	1.00	-