

## Answers:

### Question-1:

Number of test cases = 10

TEST CASE NUMBER	INPUTS	EXPECTED OUTPUT		
	PPBT	SHIPPING	TAX	TOTATL PRICE
TEST CASE 1	\$.01	\$15.95	\$.00	\$15.96
TEST CASE 2	\$99.99	\$15.95	\$8.49	\$124.43
TEST CASE 3	\$100.00	\$12.95	\$8.50	\$121.45
TEST CASE 4	\$299.99	\$12.95	\$25.49	\$338.43
TEST CASE 5	\$300.00	\$10.95	\$25.50	\$336.45
TEST CASE 6	\$500.00	\$10.95	\$42.50	\$553.45
TEST CASE 7	\$500.01	\$6.95	\$42.50	\$549.46
TEST CASE 8	\$749.99	\$6.95	\$63.74	\$820.68
TEST CASE 9	\$750.00	\$.00	\$63.75	\$813.75
TEST CASE 10	\$750.01	\$.00	\$63.75	\$813.76

### Assumptions:

1. There is no Product at \$0.00 price or less than \$0.00 price, the initial price is above \$0.00
2. For any price above (Considered in TEST CASE 10), Shipping price is \$0.00

### Question-2:

Number of test cases = 10

TEST CASE NUMBER	INPUTS	EXPECTED OUTPUT			
	PPBT	TAX	PPAT	SHIPPING	TOTAL PRICE
TEST CASE 1	\$.01	\$.00	\$.01	\$15.95	\$15.96
TEST CASE 2	\$92.16	\$7.83	\$99.99	\$15.95	\$115.94
TEST CASE 3	\$92.17	\$7.83	\$100.00	\$12.95	\$112.95
TEST CASE 4	\$276.49	\$23.50	\$299.99	\$12.95	\$312.94
TEST CASE 5	\$276.50	\$23.50	\$300.00	\$10.95	\$310.95
TEST CASE 6	\$460.83	\$39.17	\$500.00	\$10.95	\$510.95
TEST CASE 7	\$460.84	\$39.17	\$500.01	\$6.95	\$506.96
TEST CASE 8	\$691.24	\$58.75	\$749.99	\$6.95	\$756.94
TEST CASE 9	\$691.25	\$58.75	\$750.00	\$.00	\$750.00
TEST CASE 10	\$691.26	\$58.75	\$750.01	\$.00	\$750.01

### Assumptions:

1. There is no Product at \$0.00 price or less than \$0.00 price, the initial price is above \$0.00
2. Here PPAT are the Product Price After Tax (PPBT+TAX) and shipping price is based on PPAT.

Question-3:

Number of test cases = 18

TEST CASE NUMBER	INPUTS	EXPECTED OUTPUT			
	AGL(feet)	MOTOR STATES	CHUTE	POD LEGS	ALARM
TEST CASE 1	8,000.1	OFF	off	retract	OFF
TEST CASE 2	8,000.0	OFF	deployed	retract	OFF
TEST CASE 3	5,000.1	OFF	released	retract	OFF
TEST CASE 4	5,000.0	RB1	released	retract	OFF
TEST CASE 5	4,000.1	RB1	released	retract	OFF
TEST CASE 6	4,000.0	RB2	released	retract	OFF
TEST CASE 7	3,250.1	RB2	released	retract	OFF
TEST CASE 8	3,250.0	RB3	released	retract	OFF
TEST CASE 9	2,750.1	RB3	released	retract	OFF
TEST CASE 10	2,750.0	RB4	released	retract	OFF
TEST CASE 11	900.1	RB4	released	retract	OFF
TEST CASE 12	900.0	RB5	released	retract	OFF
TEST CASE 13	500.1	RB5	released	retract	OFF
TEST CASE 14	500.0	RB5	released	extend	OFF
TEST CASE 15	350.0	RB5	released	extend	OFF
TEST CASE 16	349.9	RB5	released	extend	ON
TEST CASE 17	0.1	RB5	released	extend	ON
TEST CASE 18	0.0	OFF	released	extend	ON

**Assumptions:**

- 1) Units of all the values in AGL column are in feet.
- 2) The alarm sounds below 350 feet AGL, at and above 350 feet Alarm is considered OFF.
- 3) From and above 8000.1 feet, the states of Motor state, chute, pod legs and alarm are same.
- 4) State transitions are considered instantaneous.

Question-4a:

1)

	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5
Conditions					
\$0.01 <= PPBT <= \$99.99	Y				
\$100.00 <= PPBT <= \$299.99		Y			
\$300.00 <= PPBT <= \$500.00			Y		
\$500.01 <= PPBT <= \$749.99				Y	
\$750.00 <= PPBT <= \$=					Y
Actions					
Shipping Charges	\$15.95	\$12.95	\$10.95	\$6.95	\$0.00
Tax	8.50%	8.50%	8.50%	8.50%	8.50%

2) Number of test cases required 10

3) No, the number of test cases does not agree with the total 5 test cases from the above rules as it ignores the boundary values. 5 boundary values are untested.

Question-4b:

1)

	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5
<b>Conditions</b>					
\$0.01 <= PPBT <= \$92.16	Y				
\$92.17 <= PPBT <= \$276.49		Y			
\$276.50 <= PPBT <= \$460.83			Y		
\$460.84 <= PPBT <= \$691.24				Y	
\$691.25 <= PPBT <= \$∞					Y
<b>Actions</b>					
Shipping Charges	\$15.95	\$12.95	\$10.95	\$6.95	\$0.00
Tax	8.50%	8.50%	8.50%	8.50%	8.50%

2) Number of tests required are 10

3) No, the number of test cases does not agree with the total 5 test cases from the above rules as it ignores the boundary values. 5 boundary values are untested.

Question-4c:

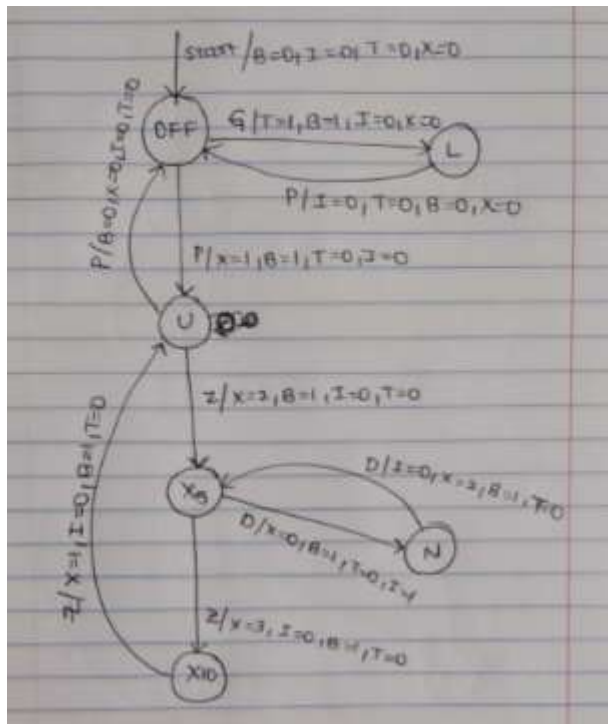
1)

	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7	Rule 8	Rule 9	Rule 10	Rule 11
<b>Conditions</b>											
8,000.1 feet <= AGL <= ∞ feet	Y										
5,000.2 feet <= AGL <= 8,000.0 feet		Y									
AGL = 5,000.1 feet			Y								
4,000.1 feet <= AGL <= 5,000.0 feet				Y							
3,250.1 feet <= AGL <= 4,000.0 feet					Y						
2,750.1 feet <= AGL <= 3,250.0 feet						Y					
900.1 feet <= AGL <= 2,750.0 feet							Y				
500.1 feet <= AGL <= 900.0 feet								Y			
350.0 feet <= AGL <= 500.0 feet									Y		
349.9 feet <= AGL <= 0.1 feet										Y	
AGL = 0.0 feet											Y
<b>Actions</b>											
motor state	OFF	OFF	OFF	RB1	RB2	RB3	RB4	RB5	RB5	RB5	OFF
Chute	off	deployed	released	released	released	released	released	released	released	released	released
Pod legs	retract	retract	retract	retract	retract	retract	retract	retract	extend	extend	extend
alarm	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON

2) Number of test cases are 18.

3) No, here rules are 11 but we test cases 18 because in above table boundary cases are not considered. 7 boundary values are untested.

Question-5:



Here

U state is Normal state mode

Start is at OFF state