PDS END-SEMESTER 2019 AUTUMN: SOLUTIONS TO QUESTIONS

Question	Correct Answer
1(a)	2
1(b)	CO2
1(c)	fox is running.
1(d)	50
1(e)	(ii)
1(f)	guess[2][3]: 16
1(g)	55, 80, 90
1(h)	24, 25, 16, 33, 90, 89, 67, 35
1(i)	5 9 12 14 15
1(j)	(1,1) (5,2) (9,3)
1(k)	Times called: 15 **OR** 14 **[confusion about first call]** Value returned: 1324
2(a)	(i) -2048, +2047 **OR** -2^11, 2^11-1 (ii) -511, +511 **OR** -2^9**+**1, 2^9-1
2(b)	11101111.0110001
2(c)	n % 16 n / 16, hexstr 'A' + (hex - 10) '0' + hex
2(d)	$(78)_2$ = 0100 1110 $(116)_2$ = 0111 0100 $(-116)_2$ = 1000 1011 (One's complement) 0100 1110 1000 1011 ---------- 1101 1001 Final Answer (in 1's complement): 1101 1001
3(a)	left <= right **OR** left < right Data[middle] == mynum left = middle + 1 right = middle - 1
3(b)	i = n - 1 j < i rec[j].rollno > rec[j+1].rollno rec[j+1] = temp
3(c)	Ceiling $(\log_2 N)$ M + N - 1 1, N N(N-1)/2
3(d)	Original: 40 10 30 50 70 25 60 5 Iter 1: 10 40 30 50 70 25 60 5 Iter 2: 10 30 40 50 70 25 60 5 Iter 3: 10 30 40 50 70 25 60 5 Iter 4: 10 30 40 50 70 25 60 5 Iter 5: 10 25 30 40 50 70 60 5 Iter 6: 10 25 30 40 50 60 70 5 Iter 7: 5 10 25 30 40 50 60 70

4(a)	(i)　0 (ii) 1

4(b)	`Line 3 :: char *`
	
	`Line 12 :: char *x`
	
	`Line 15 :: >=`　　　OR　`>`
	
	`Line 19 :: ++begin`　OR　`begin+1`
	
	`Line 19 :: --end`　　OR　`end-1`

4(c)	`char *`
	`^`
	`str`
	`'\0'`　　OR　　`NULL`
	`str+i`

5(a)	`line[i+j] != srchstr[j]`
	
	`j == lensrch`
	
	`argc != 4`
	
	`argv[1], "r"`
	
	`argv[3], "w"`
	
	`fin==NULL || fout==NULL`
	
	`line, MAXLEN, fin`
	
	`fout, "%s\n", line`　**[marks to be awarded also without the '\n']**

5(b)	(E)
5(c)	(i)　　　TRUE (ii)　　FALSE (iii)　　FALSE (iv)　　TRUE
6(a)	`Ajit, 20`
6(b)	`50 40 30 20 10`

6(c)	`0`
	`head`
	`NULL`
	`ptr = ptr->next`

6(d)	`1 3 5 5 3 1`　**[Error in question; marks to be awarded to all]**

6(e)	`scanf ("%f %f", &P1.x, &P1.y);`
	
	`scanf ("%f %f", &P2->x, &P2->y);`
	
	`dist=sqrt((P1.x-p2->x)*(P1.x-P2->x)+(P1.y-P2->y)*(P1.y - P2->y);`
	
	[identifying any 2 errors correctly will be awarded full marks]