Q1. If at least two of the statements below are false, what is the probability that statement 2 is true?

A is true.
 B is true.
 A is false and B is true.
 a.0
 b.0.25
 c.0.5
 d.0.75
 e.1

Q2. What is the value of p, in main()? C code follows.

```
char* rev(char s[])
{
for(int i = 0, n = strlen(s); s[i]; ++i)
{
char c = s[i];
s[i] = s[n-1-i], s[i] = c;
}
return s;
}
int main()
{
char s[] = "uncommon ideas!";
char *p = rev(s);
}
a. !saedi nommocnu
```

b. ideas! uncommonc. uncommon ideas!d. nommocnu !saedi

Q3. Given below is the post-order traversal of a binary search tree. Which of the following is its pre-order traversal? (6, 5, 12, 13, 11, 15, 14, 20, 16, 10)

a. 10, 5, 6, 16, 14, 11, 13, 12, 15, 20
b. 10, 5, 6, 15, 14, 13, 11, 12, 16, 20
c. 10, 5, 6, 14, 13, 11, 12, 16, 15, 20
d. 10, 5, 6, 16, 13, 11, 12, 14, 15, 20

v:* {behavior:url(#default#VML);} o:* {behavior:url(#default#VML);} w:*
{behavior:url(#default#VML);} .shape {behavior:url(#default#VML);}

Q4. You are given a wall that is 50m wide and a rope that is 20m in length. Place the two ends of the rope on the wall and form a figure such that the enclosed area between the wall and the rope is maximized. What is this area?

a. 63.63 b. 127 c. 50 d. 127.26

Q5. Insert the numbers in the sequence "8, 5, 1, 4, 2, 10, 12, 7, 3" into a min-heap. The order of insertion is as given. The insertion happens as described here. If the root is said to be at level 1, the roots children at level 2, and so on, what is the level in which 8 occurs in the heap?

a. 1

b. 2

c. 3

d. 4

e. 5

Q6. Given 4 processes with their entering time and execution time as follows :

Process Name Entering Time Execution Time

A CPU following the shortest job first algorithm(preemptive) is going to execute them.A shortest job first algorithm will execute a process with the smallest CPU burst first, because it is preemptive, If a process is in execution and another process comes in with CPU burst being smaller than the remaining execution time of the currently executing process, then the new process will be allotted the CPU and the process currently executing will be sent to the waiting queue. For the given processes above Calculate the average waiting time.

a. 7.25 b. 6.75 c. 5.25 d. 6.25 e. None of the above

Q7.Given a number N, generate a sequence S such that

S[0] = N S[i+1] = (3 * S[i] + 1) / 2 if S[i] is odd, = S[i] / 2, if S[i] is even,

till you reach 1.

For example for N = 5, the sequence is 5, 8, 4, 2, 1 Given two numbers 20 and 35, generate the sequence S for A and B, and find the number where the two sequences meet.

a.20 b.30 c.35 d.40

Q8. What is the big-O time complexity of func(p)?

C++ code follows.

```
int get_power(int a, int b)
{
if(!b) return 1;
if(b%2) return a * get_power(a, b/2);
return get_power(a, b/2);
}
int func(int p)
{
int sum = 0;
for(int i = 1; i <= p; ++i) {
sum += get_power(i, 5);
}
return sum;
}
a. O(p log5)
b. O(plogp)
c. O(logp)
d. O(p)
e. O(p + logp)
```