

Unit # 3: Algorithmic Thinking and Problem Solving

Q.1: Fill in the blanks.

- i. Identifying a problem is the First step of a problem solving process.
- ii. Algorithm is the step by step solution of a problem.
- iii. Small and manageable segment of a complex problem is called Sub problem.
- iv. Problem solving process consists of Six steps to solve a problem.
- v. Conditional Statement is used to assess a situation and accordingly a decision is taken.

Q.2: Match column-A with column-B and write the correct option i.e. (A, B, C....E) in column-C.

| Column – A | Column – B | Column – C |
|--------------------------|--------------------------|-------------------|
| 1. Loop | A. Data to be processed | 1. <u>D</u> |
| 2. Conditional Statement | B. Feedback | 2. <u>E</u> |
| 3. Input | C. Resulting Information | 3. <u>A</u> |
| 4. Output | D. Repetition | 4. <u>C</u> |
| 5. Solution Evaluation | E. IF – THEN | 5. <u>B</u> |

Short response questions:

Q.1: Write down the algorithm to solve the following problems:

- Ans: (a) **Making a Cup of Tea**
- i. Take some water in a kettle and put it on fire.
 - ii. Put sugar and tea leave in the water and wait for water to boil.
 - iii. Put milk and wait to boil.
 - iv. The tea is ready.
- (b) **Going to school**
- i. Wake up at 7 o'clock.
 - ii. Go to washroom to get fresh.
 - iii. Put on the school uniform.
 - iv. Set the school bag.
 - v. Do breakfast.
 - vi. Leave at 8 o'clock for school.
- (c) **Find area of a Rectangle.**
- i. Take the value of Length and width of the rectangle as input.
 - ii. Find the area by multiplying length with width of the rectangle.
 - iii. Display the area as output.

Q.2: Differentiate between a potential solution and an ideal solution?

Ans: All the possible solutions that can help to solve the problem are called potential solution. While the solution that best solve the problem and has more advantages over other solutions is called ideal solution.

Q.3: Develop your own conditional statements.

- Ans:
1. IF I got first position in the exam, THEN my father will bug me a bicycle.
 2. IF I am not feeling well, THEN I should go to see the doctor.
 3. IF today is rainy day, THEN I must carry an umbrella.

Q.4: Write two examples of repetition from the real world.

- Ans:
1. I offer prayers daily.
 2. I go to playground daily for an hour.