Class 8
Subject- Computer Science
Topic -Algorithm and Flowchart (Page 38-42)

Answer sheet:-

A) **Fill in the blanks :-**
- Computer programs
- Algorithm
- Key role
- Result, data, processing, automated, reasoning.
- Sequential task
- Terminal box

B) **Answer the following questions:-**
1) A computer program which is a procedure for solving a problem and based on conducting a sequence of specify the action is called an algorithm.
2) Characteristics of an algorithm:-
   i. Input- It must take zero or more inputs.
   ii. Output- it may produce one or more outputs.
   iii. Definiteness- each state must be defined precisely in pseudo-code.
   iv. Effectiveness- It should be possible to calculate the exact value involved in the procedure of an algorithm using paper and pencil.
   v. Termination: - It must stop after executing a finite number of steps.
3) Refer to page 40
4) Refer to page 40
5) A flowchart is a diagrammatic representation in the form of geometrical shapes of steps taken to perform a specific task.
6) An algorithm shows that every step of reaching the final solution, while a flowchart shows us how to carry out the process by connecting it steps.
   An algorithm uses mainly words to describe the steps, while a flowchart uses the help of shapes, symbols and arrows to make the process more logical.

7)
8)
9) Flowcharts are used in many Industries such as Engineering Computer programming entertainment education and Physical Science for any of the given purpose.
   - To design a simple process or program
   - To plan a new project
   - to manage data
   - to document a process
   - to manage workflow
   - to import training

10)

11)

12) Write algorithms of the following:-
   A. <u>Algorithm to switch on the computer:-</u>
   I. Start
   II. Switch on the main power switch.
   III. Switch on the CPU.
   IV. Switch on the UPS.
   V. Switch on the monitor.
   VI. Speech on the other parts of the computer.

   B. <u>Algorithm to find the sum product and differences of two numbers:-</u>
   i. Start
   ii. Input two numbers A and B
   iii. Add the numbers C= A+B
   iv. Print the Sum C
   v. Subtract the numbers D= A-B
   vi. Print the difference D
   vii. Multiply M= A*B
   viii. Print the product M
   ix. Stop

C.) Algorithm to make Sandwich:-

i. Start
ii. Place two slices of bread on a plane.
iii. Apply cheese spread on one side of the first slice.
iv. Apply tomato sauce on one side of the second slice.
v. Please cabbage leaves cucumber and tomato pieces over the Cheese slice.
vi. Sprinkle seasoning.
vii. Put the second slide over it.
viii. The sandwich is ready.

D) Algorithm to find average of three numbers:-

i. Start
ii. Input A B C
iii. Sum= A+B+C
iv. Avg=Sum/3
v. Print Avg
vi. Stop

E) Algorithm to find the compound interest:-

i. Start
ii. Input P,N,R
iii. Find the amount A as $P(1+R/100)^N$
iv. Find the Compound Interest,CI as A-P
v. Print CI
vi. Stop

Check your progress (Page 41) from the book:-

1) Algorithm to find the simple interest:-
   i. Start
   ii. Input P,R,T
   iii. SI=P*R*T
   iv. Print SI
   v. Stop

2) <u>Algorithm to find the area of a triangle:-</u>
   i.   Start
   ii.   Input base ,height
   iii. Area= ½* base* height
   iv.   Print Area
   v.   Stop

3) <u>To find the profit % of an item:-</u>
   i.   Start
   ii.   Input CP and P
   iii. Profit%= (Profit/CP)*100%
   iv.   Print Profit%
   v.   Stop

4) <u>Algorithm to find the circumference of a circle:-π=22/7</u>
   i.   Start
   ii.   Input r (radius)
   iii. Circumference (C)=2πr
   iv.   Print C
   v.   Stop

5) <u>Algorithm to find the sum of a square of two numbers:-</u>
   i.   Start
   ii.   Input m and n
   iii. P=m^2+n^2
   iv.   Print P
   v.   Stop

<u>**Exercise from the textbook:-**</u>

A) <u>**Tick(✓) the correct answer:-**</u>
   1. A
   2. B
   3. D
   4. D
   5. C

B) Write T for true and F false:-

1. F
2. F
3. T
4. F
5. F

C) Write the name and use of each flowchart shape.

-----The End-----