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## Brain Developer Section - A

(A) Fill in the blanks

1) The base of Binary number system is 2

2) The base of decimal system is 10.

3) Octal Number system consists of 8 digits.

4) In Binary addition,  $1+1$  equals to 10

5) Binary number system is understood by the computer system.

6) Hexadecimal used 16 symbols to represent numbers -

7) In Binary subtraction,  $1-1$  equals 0.

Ⓑ Stat True or False

① You cannot perform arithmetical operations on binary numbers -

2) The decimal number system consists of 10 digits i.e., 0 to 9 -

3) The method to perform division of two binary numbers is not the same as that of decimal numbers -

4) 1 multiplied by 0 equals to 0 -

5) Charles Babbage introduced the concept of 0 (zero) -

6) The numbers used in octal number system are 1 to 7 -

## Section-B

### Ⓐ Multiple-choice questions.

- 1) b) Aryabhat introduced the concept of 0 (zero).
- 2) A a) Digital Computer converts the decimal format into its binary equivalent.
- 3) A computer understands only c) Binary code.
- 4) In Binary multiplication,  $1 \times 1$  equal to b) 1
- 5) To convert Decimal number into Binary number, divide the number by a) 2

### Ⓑ Answer the following questions

Q1) What is a Number system? Name the different types of number system used.

Ans A number system is a set of values used to represent different quantities.  
There are 4 types of number system:

- \* Decimal Number system
- \* Binary number system
- \* Octal number system
- \* Hexadecimal number system

Q2) What are the rules to convert a Decimal number into a Binary number?

Ans To convert a decimal number into binary number, we have to follow these rules:-

Step 1: Divide the given decimal number with the base 2.

Step 2: Write down the remainder, divide the quotient again by 2.

Step 3: Repeat step 2 till the quotient is zero.

Q4) Briefly explain the Octal number system.

Ans The Octal Number system (Oct) consist of 8 digits : 0 to 7 with the base 8. The concept of Octal number system came from the Native Americans as they used to count ~~at~~ numbers by ~~o~~ using the space between their fingers rather than using their fingers.

Q5) What do you understand by Hexadecimal number System ?

Ans This number system consists of 16 digits: 0-9 and the letters A-F, where A-F represents digits 10 to 15 with the base 16. This number system is also known as Hex, where Hex = 6 and Decimal = 10, so it is called Hexadecimal.