This question paper contains 4 printed pages]

Roll No. ☐☐☐☐☐☐☐☐☐☐☐

S. No. of Question Paper : **8305**

Unique Paper Code : **234191**   **C**

Name of the Paper : **CSAT-101 Computational Skills**

Name of the Course : **B.Sc. (Programme) (Part I)**

Semester : **I**

Duration : **3 Hours**   Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Section A is compulsory.

Attempt any *five* questions from Section B.

Section A

(Compulsory)

1. Answer the following :

   (*i*) Which hardware was used by the first generation computers ?

   (*ii*) A collection of 8 bits is called a ....

   (*iii*) In which component of CPU does addition and comparison of data take place ?

   (*iv*) What is the name of the computer memory that is used for temporary storage of data and program ?

   (*v*) Name the device used for input of data.

   (*vi*) Name the input device used for converting pictures, maps into digital form for storage in computer.

   (*vii*) A computer works on the principle of .... , ... and

   ....

(*viii*) Name the unit which is used to measure the computer's processing speed.

(*ix*) Arrange the following memory units in ascending order of their storage capacities :

KB, Byte, TB, MB.

(*x*) Give the valid digits/characters used in the hexadecimal number system.

(*xi*) $(7432)_8 = (?)_2$

(*xii*) $(110011111110011)_2 = (?)_{16}$

(*xiii*) $(110101)_2 + (1011111)_2 = (?)_2$

(*xiv*) $(1110101010)_2 - (100101100)_2 = (?)_2$

(*xv*) Which communication network is used by large organizations over regional, national or global area?   15

2.   Answer the following :

(*i*) List *two* applications of Internet.

(*ii*) .... is the process of moving a file from a remote computer to one's own computer.

(*iii*) What is the full form of WWW ?

(*iv*) Name *one* secondary storage device.

(*v*) What is a "pixel" ?

(*vi*) List *two* important applications of "generative graphics".

(*vii*) Which device converts signals from analog to digital or vice-versa ?

(*viii*) Any program is an algorithm, but the reverse is not true. (True/False)

(*ix*) Various ways to represent an algorithm are .... and ....

(*x*) The direction of flow in a flowchart is usually from .... to   10

Section B

Attempt any *five*.

3. (a) If computers are so accurate, why is the phrase 'garbage in—garbage out' associated with their use. Discuss. 3

   (b) Convert $(00110101)_2$ to BCD.

   (**Hint** : First convert to decimal and then to BCD) 3

   (c) Distinguish between second and third generation computers. 4

4. (a) Define a computer. Describe different components of a computer system. 5

   (b) What does the term "volatile" mean as it pertains to computer memory? 2

   (c) Discuss the similarities and differences between MICR and OCR devices. 3

5. (a) Write an algorithm to find the largest of three numbers. 4

   (b) Subtract $(75)_{10}$ from $(69)_{10}$ using 2's complement method. 4

   (c) Convert the following :

   (i) $(1100110.1110)_2$ to decimal

   (ii) $(150.64)_{10}$ to hexadecimal. 2

6. (a) What is a computer network? Describe a local-area network. What are the advantages of a local-area network ? 5

   (b) What is purpose of a newsgroup? Describe *two* types of newsgroups : moderated and non-moderated. 2½

   (c) How is an e-mail service similar to postal service ? Explain in your own words. 2½

7.   (a)   Write a short note on the components of multimedia.   5

     (b)   What is the difference between animation and video ? Explain.   2½

     (c)   Give the software requirements for "text" component in multimedia.   2½

8.   (a)   Draw a flowchart to add first 100 natural numbers.   4

     (b)   In a flowchart, what does the following represent :

        (i)   Rectangle

        (ii)   Parallelogram.   2

     (c)   Define Radix/base of a number system. Assuming number system of Radix '8', write down the first ten numbers in this system.   4

9.   Differentiate the following :

     (a)   ASCII and EBCDIC

     (b)   Generative graphics and Cognitive graphics

     (c)   RAM and ROM

     (d)   Printers and Plotters.   10