This question paper contains **4** printed pages]

Roll No. | | | | | | | | | | | |

S. No. of Question Paper : **19**

Unique Paper Code : **234191** **G**

Name of the Paper : **Computational Skills**

Name of the Course : **B.Sc. Hons./Physical Science/Mathematical Science**

Semester : **I**

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

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

Question No. **1** is compulsory.

Attempt any *five* from remaining seven questions.

In all six questions are to be attempted.

Marks are indicated against each question.

All parts of a question must be done together.

1. (*a*) Draw a block diagram to show the organization of computer organization. 2

(*b*) Give the full form of the following abbreviations : 2

(*i*) ASCII

(*ii*) UNIVAC.

(*c*) Differentiate between RAM and ROM. 2

(*d*) What is the value of base for decimal, hexadecimal, binary and octal number systems ? 2

P.T.O.

(*e*) Give names of any *four* operating systems. 2

(*f*) Find out 2's complement of the following numbers : 2

(*i*) $(1110001)_2$

(*ii*) $(111111)_2$

(*g*) What is cache memory ? 2

(*h*) List out the main function of CPU in a computer system. 2

(*i*) List out the advantage and limitation of magnetic disk. 2

(*j*) What is touch screen device ? 2

(*k*) What are main features of smart phone ? 2

(*l*) Define the term byte. What is the difference between bit and a byte ? 3

2. (*a*) Perform the following conversions : 3×2

(*i*) $(1110101)_2 = (?)_{16}$

(*ii*) $(11010)_2 = (?)_{10}$

(*iii*) $(2AC)_{16} = (?)_2$

(*b*) Perform the following operation :

(*i*) Add $(01110000)_2$ and $(01010101)_2$

(*ii*) Subtract $(011011)_2$ from $(110111)_2$ using complementary method. 2×2

3. (*a*) What is an algorithm ? What are the characteristics necessary for a sequence of instructions to qualify as an algorithm ? 5

(*b*) Draw a flow chart to read a number and print whether the number entered is zero, positive or a negative number ? 5

4. (*a*) Differentiate between impact and non-impact printers. Also mention their advantages and disadvantages. 5

(*b*) What is software ? Explain application and system software with an example. 5

5. (*a*) What is internet ? Write *four* services provided by the internet and how each of these services helps the users ? 5

(*b*) Name any *two* computer codes. What is unicode ? Also mention the need of having unicode. 5

6. (*a*) What do you mean by registers and write the function of the following registers ?

(*i*) Program Control Register

(*ii*) Instruction Register. 4

(*b*) Differentiate between (any *three*) :

(*i*) CISC and RISC

(*ii*) Primary and secondary memory

(*iii*) Bridge and router

(*iv*) PROM and EPROM. 3×2

7. (*a*) Define multimedia. Explain its various applications. 5

(*b*) Name any *two* web browsers. Mention *four* facilities that browsers provide to help users save time while internet surfing. 5

8. Write short notes on the following (any *two*) : 2×5

(*i*) Generation of computers

(*ii*) Input devices

(*iii*) Network topologies.