INTRODUCTION TO IT SYSTEMS

Time Allowed: 3 Hours *Full Marks: 60*

Answer to Question No. 1 of Group A must be written in the main answer script. In Question No. 1, out of 2 marks for each MCQ, 1 marks is allotted for right answer and 1 marks is allotted for correct explanation of the answer. However, no marks will be given for wrong explanation of the answer of each MCQ type question.
Answer any Five (05) Questions from Group-B.

GROUP-A

Choose the correct answer from the given alternatives and explain your answer **(any ten)**. 2x10=20

i) The number of steps on algorithm should be-
a) Finite b) Infinite c) Fixed d) Floating

ii) Minimum number of bits required to represent 15 different characters individually:
a) 15 b) 4 c) 5 d) 3

iii) Which of the following memory is used to design BIOS?
a) RAM b) ROM c) Cache d) Virtual Memory

iv) Logical operations are performed in computer using-
a) Memory Unit b) ALU c) CD d) ROM

v) Equivalent Binary representation of the Gray code 0111 is
a) 0101 b) 1000 c) 1010 d) 1111

vi) Best choice of the tools to create dynamic web page-
a) CSS b) JavaScript c) Java d) paint.

vii) Best choice of the tools to introduce different style in a web page-
a) CSS b) JavaScript c) Java d) Power point.

viii) Operating Systems used in the computer system for _____.
a) File management b) Process management c) Device management d) All of these

ix) Free and efficient operating system is _____.
a) UNIX b) Windows c) MAC d) None of these.

x) DNS is-
a) Horizontal naming system b) Vertical naming system c) client server system d) None of these

xi) A simple tool that helps you create, organize, and analyze data.
a) Browser b) Web viewer c) Spreadsheet d) Web server

xii) The result of the expression 29 + 1 =
a) 11101 b) 11110 c) 11000 d) 10001

xiii) Example of Universal Gate-
a) NAND b) XOR c) OR d) AND

xiv) Which of the following is used for connecting computers in a large area such as country, continent etc
a) LAN b) WAN c) MAN d) PAN

xv) Which of the following not a browser ?
a) Safari b) Android c) Chrome d) Edge

GROUP-B

Answer any Five (05) questions 8x5=40

2. a) Define algorithm with a suitable example.
   b) Write the advantages of using flow chart.
   c) Draw a flow chart to calculate the factorial of an integer. 3 + 1 + 4

3. a) Explain the advantages of multi-user and multitasking OS.
   b) Write down the differences between system software and application software.
   c) Describe the general architecture of an operating system. 2 + 2 + 4

4. a) Why computer security is important?
   b) What is cyber stalking?
   c) What is computer hacking?
   d) Can you protect your personal computer from being hacked ? How? 2 + 2 + 2 + 2

5. a) What is CSS?
   b) Identify the ways to integrate CSS on a web page.
   c) Explain the differences between <picture> tag and <img> tag used in HTML. 1 + 3 + 4

6. a) Explain the utility of JavaScript.
   b) What are the key difference between java and JavaScript?
   c) Differentiate between an ordered list and an unordered list used in HTML with proper example. 2 + 2 + 4

7. a) Draw the block diagram of a digital computer specifying all parts of it .
   b) Define ROM, PROM, EPROM and EEPROM.
   c) What is Booting? 3 + 4 + 1

8. a) Why we use web browser? 2 + 2 + 2 + 2
   b) Why are search engines important ?
   c) Write down the full form of e-mail and www.
   d) Write down the objectives of Digital India.

9. a) State and prove the De-Morgan's Law in Boolean algebra.
   b) Convert $(10110)_2$ to its equivalent gray code. (2+3) + 2+1
   c) Represent $(5)_{10}$ using 2-4-2-1 BCD code.

10. a) Define universal gates. Why those gates are termed as universal gates ?
   b) Convert the following as indicated:
      i) $(175.25)_{10} = (?)_8$ ii) $(1011.101)_2 = (?)_{10}$
   c) Represent $(-14)_{10}$ in 2's complement form using 8-bits representation. (1+1) + (2+2) + 2