January 2022

INTRODUCTION TO IT SYSTEMS

Time Allowed: 1.5 Hours   Full Marks: 60

Answer to Question Nos. 1 is compulsory and Answer <u>any two</u> questions from the rest.

1.   Answer the following questions (any twenty):   20×2

   i)   A hard disc is divided into tracks, which are further sub divided into –
   - a.   Clusters
   - b.   Sectors
   - c.   Vectors
   - d.   Heads

   ii)   Binary equivalent of 97_{10} is–
   - a.   1100000
   - b.   1100001
   - c.   1100010
   - d.   1100011

   iii)   Portion of information processing cycle in which computer acquires data from some source is called –
   - a.   Input
   - b.   Output
   - c.   Processing
   - d.   Storage

   iv)   The expression $Y = (A + B)(B + C)(C + A)$ shows the _____ operation.
   - a.   AND
   - b.   POS
   - c.   SOP
   - d.   NAND

   v)   Type of software used to create slideshow is –
   - a.   Web design software
   - b.   Presentation software
   - c.   Word-processing software
   - d.   Spreadsheet software

   vi)   Smart phone is an example of –
   - a.   Personal computer
   - b.   Analog computer
   - c.   Mainframe computer
   - d.   Super computer

   vii)   Top listed super computer is –
   - a.   Sunway taihulight
   - b.   Sequoia
   - c.   Cori
   - d.   Mira

   viii)   Which of the following is an example of a Real Time Operating System –
   - a.   MAC
   - b.   MS-DOS
   - c.   Windows 10
   - d.   Process Control

ix) Which of the following is not an operating system?–
    a. Windows
    b. Linux
    c. Oracle
    d. DOS

x) A detailed flowchart is called _____ .
    a. Stack
    b. Macro
    c. Micro
    d. Micro
    e. Union

xi) Flowcharts and algorithms are used for –
    a. Better programming
    b. Easy testing and debugging
    c. Efficient coding
    d. All of the above

xii) The operation represented by parallelogram –
    a. Input/output
    b. Assignment
    c. Comparison
    d. Condition

xiii) Which of the following is a pictorial representation of an algorithm? –
    a. Pseudocode
    b. Program
    c. Flowchart
    d. None

xiv) <b> tag makes the enclosed text bold. What is other tag to make text bold?
    a. <strong>
    b. <dar>
    c. <black>
    d. <emp>

xv) All html tags are must be enclosed in –
    a. ? And !
    b. < And >
    c. { And }
    d. # And #

xvi) CSS stands for –
    a. Cascade style sheets
    b. Color and style sheets
    c. Cascading style sheets
    d. None of the above

xvii) If we want define style for a unique element, then which css selector will we use?
    a. Id
    b. text
    c. class
    d. name

xviii) Inside which HTML element do we put the JavaScript?
    a. <js>
    b. <script>
    c. <scripting>
    d. <javascript>
    e.

xix) Tags and text that are not directly displayed on the page are written in _____ section.
   a. <html>
   b. <head>
   c. <title>
   d. <body>

xx) What will the following code return:
   Boolean(10 > 9)
   a. NaN
   b. true
   c. false

xxi) Which of the following CSS property is used to set the blend mode for each background layer of an element?
   a. background-blend-mode property
   b. background-collapse property
   c. background-transform property
   d. background-origin property

xxii) In ethical hacking and cyber security, there are _____ types of scanning.
   a. 1
   b. 2
   c. 3
   d. 4

xxiii) Which of the following is a programs that copy themselves throughout a computer or network?
   a. Worms
   b. Trojans
   c. Viruses
   d. Rootkits

xxiv) Which of the following port and IP address scanner famous among the users?
   a. Cain and Abel
   b. Angry IP Scanner
   c. Snort
   d. Ettercap

xxv) Which of the following transmission directions listed is not a legitimate channel?
   a. Simplex
   b. Half Duplex
   c. Full Duplex
   d. Double Duplex

2. a) What are the meant by 1's and 2's complements of a binary number? Add the following numbers using the 2's complement method: https://www.wbscteonline.com
   (i) -48 and +31
   (ii) -64 and +46   2 + 2 + 1
   b) Name the gates that are used as universal gates. Explain with example.   5

3. a) What is operating system?
   b) What are the basic services provided by the operating system?
   c) What is CPU and I/O bound jobs?   3 + 4 + 3

4. a) What are the main advantages of algorithm? Write an algorithm that will read input temperature in Centigrade and convert to Fahrenheit. Draw a Flowchart that will reads two values and determines the largest value and prints the largest value.   2 + 2 + 2
   b) What is time sharing operating system?   4

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5. a) What is malicious software? Give example of malicious program.   3 + 3
   b) Define a worm.   2
   c) List some properties of virus.   2

6. a) Draw the logic diagram of an Ex-OR gate and discuss its operation.   2 + 2
   b) What do you mean by client server architecture Explain?   4
   c) Prove that:

   $$\overline{A}\,\overline{B}\,\overline{C} + \overline{A}\,B\,\overline{C} + A\,\overline{B}\,\overline{C} + A\,B\,\overline{C} = C$$ 2

7. a) What is a gray code? Why is it important? Express the following number in Gray code form:
   (i) 15   (ii) 27   (3 + 3 + 1 + 1)

   b) What are the advantages of multiprocessor system?   2

8. a) Write a program to create HTML table with the following output: 5

Name	Department	Mobile Number
Rahul Das	DME	9123443518
Sanjib Paul	DCE	8513546728
Sibnath Dey	DSE	9175354578

   b) What is a bootstrap program in OS? What is Batch Operating System?   3 + 2

9. a) What is the difference between static and dynamic web pages?   3
   b) Write a short note on Types of OS.   5
   c) What are the advantages of using JavaScript?   2

10. a) Write a JavaScript Program to Find HCF or GCD.   5
    b) In how many ways a JavaScript code can be involved in an HTML file?   3
    c) What is the difference between the operators '= =' & '= = ='?   2

11. a) Prove that: 5

    $$AB + \overline{AC} + A\,\overline{B}\,C(\,AB + C) = 1$$

    b) Write short note on type of software.   3
    c) What is a denial of service attack?   2

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