D 93912–B (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER B.A./B.Sc. DEGREE EXAMINATION NOVEMBER 2020

(CBCSS)

Computer Science

BCSDS 1C 01—PYTHON PROGRAMMING

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer at least **eight** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 24.

1. Write Python statements for concatenating two strings "XYZ" and "*abc*".
2. Interpret the following :

```
for x in range (10) :
    print(x).
```

3. Differentiate Table and Array.
4. Write and explain any *two* aggregation functions.
5. What is a structured array ?
6. How will you copy all non-zero values in an array to a new array ?
7. What is a function ?
8. Differentiate arrays and Lists.
9. What are the different types of parameters used in Python functions ?
10. What is a text file ?
11. Define class and object.
12. Explain "self in Python class.

(8 × 3 = 24 marks)

Turn over

Section B (Short Essay Type Questions)

Answer at least **five** *questions.*
Each question carries 5 *marks.*
All questions can be attended.
Overall Ceiling 25.

13. Write algorithm and draw flow chart to find the largest of three numbers.
14. Explain the syntax of WHILE loop and nested IF statement. Write a Python program to print first n values in a Fibonacci series.
15. How will you initialize a two dimensional array of size $m \times n$ with all 0s. Explain broadcasting with a suitable example.
16. Explain array slicing and Boolean array indexing with examples (Numpy in Python).
17. Explain Tuples and Dictionaries with suitable examples.
18. Illustrate the steps in creating class and objects in Python.
19. Write a note on exception handling in Python.

(5 × 5 = 25 marks)

Section C (Essay Type Questions)

Answer any **one** *question.*
Each question carries 11 *marks.*

20. Give a detailed account of data types and expressions in Python. Write a Python program to sort an array of n integers.
21. Discuss any five List operations in Python with suitable examples. Demonstrate with example how user defined functions are created and used.

(1 × 11 = 11 marks)

D 93912 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020

Computer Science

BCS 1C 01—COMPUTER FUNDAMENTALS

(2019 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer at least **eight** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 24.

1. What is cache memory ?
2. What is EBCDIC ?
3. What is parity bit ? Explain its purpose.
4. What is the use of Hamming code ?
5. What is EPROM ?
6. List four output devices.
7. What is a Buzzer ?
8. What is a Trackball ?
9. What is the use of a remote control ?
10. What do you mean by primary memory ?
11. What is a storage device ?
12. How will you get 2's complement of a binary number ?

(8 × 3 = 24 marks)

Section B

Answer at least **five** *questions.*
Each question carries 5 *marks.*
All questions can be attended.
Overall Ceiling 25.

13. Explain XNOR gate with truth table and diagrams.
14. Convert $(58.25)_{10}$ to binary, octal and hexadecimal number systems.
15. Explain Binary Coded Decimal and its representation.
16. Explain Product of Sums (POS) with an example.
17. Explain full adder with truth table and diagram.
18. Explain plotters and its characteristics.
19. Write short notes on monitors.

(5 × 5 = 25 marks)

Section C

Answer any **one** *question.*
The question carries 11 *marks.*

20. Explain various symbols used in flowcharting. List the advantages and limitations of flowchart.
21. Explain Boolean postulates and laws of Boolean algebra.

(1 × 11 = 11 marks)

D 93911 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION, NOVEMBER 2020

Computer Science

BCS 1B 01—COMPUTER FUNDAMENTALS AND HTML PROBLEM SOLVING USING C

(2019 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer at least **eight** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 24.

1. Which are the different number systems and its base ?
2. What is a compiler ?
3. What is cache memory ?
4. What do you mean by an adapter ?
5. What is Unicode ?
6. What is the purpose of Boolean algebra ?
7. What is a URL ? Give an example.
8. What is an empty tag ? Give example.
9. How will you create a textbox in HTML ?
10. Write an example program for inline CSS.
11. What is meant by selector in CSS ?
12. What do you mean by a domain name ? Give example.

(8 × 3 = 24 marks)

Section B (Short Essay Type Questions)

Answer at least **five** *questions.*
Each question carries 5 *marks.*
All questions can be attended.
Overall Ceiling 25.

13. With a diagram explain the components of a computer.
14. Explain BCD and its representation.

Turn over

15. Explain SOP with an example.

16. Explain DeMorgan's theorem for NOR gates.

17. Draw a Flow chart to check whether a number is prime.

18. Explain paragraph tags with its attributes.

19. How will you create hyperlinks in HTML ? Give an example program.

(5 × 5 = 25 marks)

Section C (Essay Type Questions)

Answer any **one** *question.*
The question carries 11 *marks.*

20. Explain unordered lists, ordered lists and definition lists with examples.

21. Explain the CSS font family with example programs.

(1 × 11 = 11 marks)

D 93777 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2020

Computer Science

BCS 1B 01—COMPUTER FUNDAMENTALS AND HTML

Time : Three Hours Maximum : 80 Marks

Part A (Short Answer Questions)

Answer **all** *the questions.*
Each question carries 1 *mark.*

1. What is control unit ?
2. What is Language Translators ? Why it is important in computers ?
3. Explain Excess-3 code.
4. What is Postulates ? Explain.
5. Write an algorithm for find the average of 4 numbers.
6. Explain what is a Web server ?
7. Define DNS.
8. What is ordered lists ?
9. List the different elements of a table in HTML.
10. What is background styling in CSS ? Explain.

(10 × 1 = 10 marks)

Part B (Short Paragraph Questions)

Answer **all** *the questions.*
Each question carries 3 *marks.*

11. What is a Register ? Explain any *four* commonly used registers with their functions.
12. How to convert decimal to octal number system ? Explain.
13. What are the different Flowchart Symbols ? Explain.

14. How to format heading in HTML ? Explain.

15. What is a Frame ? Advantage of using frames in HTML.

(5 × 3 = 15 marks)

Part C (Short Essay Questions)

Answer any **five** *questions.*
Each question carries 5 *marks.*

16. Explain Von Neumann architecture.

17. What is a Computer Hardware ? Explain SMPS and Ports.

18. What is De Morgan's Theorem ? Explain.

19. Write an algorithm to check whether the given number is Armstrong number or not.

20. Explain in detail the steps for web hosting.

21. Explain CSS ID and class.

22. Explain the spanning in table with example.

23. Draw flow chart to find second largest number from a list of numbers.

(5 × 5 = 25 marks)

Part D (Essay Questions)

Answer any **three** *questions.*
Each question carries 10 *marks.*

24. What is meant by a Secondary Storage Device ? List the different secondary storage devices and explain any *four* with their functioning.

25. Minimize four variables Boolean equation using K-map method. Explain.

26. Describe different attributes in HTML 5.

27. Explain different Text Format properties in CSS Styling.

28. Minimize four variables Boolean equation using K-map method. Explain.

(3 × 10 = 30 marks)

D 93776 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2020

Computer Science

BCS 1B 01—PROBLEM SOLVING USING C

(2014 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A

Answer **all** *questions.*
Each question carries 1 *mark.*

1. What will be the output of the following statements ?

   int i = 3;

   printf("%d%d",i,i++);

   A) 34. B) 43.

   C) 44. D) 33.

2. Each instruction in C program is terminated by ————.
3. In C the first character of the variable should be ————.
4. An operator used to check a condition and select a value depending on the value of the condition is called ————.
5. If the two strings are identical, then strcmp() function returns ————.
6. The typedef statement is used for declaring ———— data types.
7. ———— is the largest value that an unsigned int type can be stored.
8. Initialization of the conditional variable is necessary for while loop (True/False).
9. ———— character is used for form feed.
10. The ———— function appends not more than *n* characters.

(10 × 1 = 10 marks)

Part B

Answer all **five** *questions.*
Each question carries 2 *marks.*

11. List the different logical operators in C. Explain any one.
12. Which is the conditional operator in C ?

13. Which statement used for skipping of loop in C ?

14. Mention the string function to concatenate two strings.

15. What are arrays ?

(5 × 2 = 10 marks)

Part C

Answer any **five** *questions.*
Each question carries 4 *marks.*

16. What is a variable ? Rules for defining variables and how to declaring and initialization of variables in C.

17. Explain else-if ladder with suitable example.

18. Write a program to enter a list of numbers and find numbers which is divisible by 9. Do not use array.

19. Discuss the limitations of using getchar() & scanf() functions for reading strings.

20. Differentiate structure and union.

21. Define user defined function. Explain with example.

22. Explain the use and syntax of nested loop.

23. What is the purpose of malloc() function ? Explain.

(5 × 4 = 20 marks)

Part D

Answer any **five** *questions.*
Each question carries 8 *marks.*

24. a) What are constants ? How are they classified ? Explain. (4 marks)

    b) Write a program to concatenate two strings without using library functions. (4 marks)

25. Define two dimensional array. Write a program to find the sum of two matrices using user defined functions ? Pass arguments.

26. a) Write a C program to perform simple arithmetic calculation nested if. (5 marks)

    b) What do you mean by precedence of operators ? Explain with example. (3 marks)

27. What are the different categories of function with suitable examples ?

28. Explain the concept of pointers and structures with suitable example.

29. What is the need of using decision-making statements in a programming language ? Explain different control statements in C.

30. Write a structure program to read a date and display next date. Use users defined functions for read writ and calculate. Pass parameters. Not use any library functions. And check all validations.

31. What is macro ? Working of Macros in C with Examples. Explain macros with argument.

[5 × 8 = 40 marks]

D 93805 (Pages : 3) Name.....

Reg. No.....

FIRST SEMESTER B.A./B.Sc. DEGREE EXAMINATION
NOVEMBER 2020

(CUCBCSS)

Computer Science

BCS 1C 01—COMPUTER FUNDAMENTALS

(Common for 2014 and 2017 Admissions)

Time : Three Hours Maximum : 64 Marks

Part A

Answer **all** *questions.*

I. Choose the correct answer from the choices given :

1 What is the result when a decimal 5238 is converted to base 16 :

a) 327.375. b) 12166.

c) 1388. d) 1476.

2 $(1001)_2 - (10_2) =$ ———— ?

a) 7. b) $(7)_4$.

c) $(8)_8$. d) $(8)_4$.

3 In a flowchart a rectangular symbol represents :

a) Decision. b) Connector.

c) Terminal. d) Process.

II. Fill in the blanks :

4 The group of 8 bits is called ————.

5 The mechanism used to control a machine from a distance by means of radio or infrared signals is called ————.

6 In a Joystick the two buttons on the lever are called ————.

III. State whether the following statements are True *or* False :

7 Binary number system is a non-positional number system.

8 Hamming codes are used for error detection.

9 $(100010)_2 = (35)_{10}$.

(9 × 1 = 9 marks)

Part B

Answer **all** *questions.*

10 Give the dual of the route $A + \bar{A}.B = A + B$.

11 Write an algorithm to multiply two numbers entered by user.

12 Why NAND and NOR gates are called Universal gates ?

13 What are the features of Laser Printer ?

14 What is the use of MIDI ?

(5 × 2 = 10 marks)

Part C

Answer any **five** *questions.*

15 State and prove the two basic De Morgan's theorems.

16 Differentiate sequential and random access storage units.

17 Convert $(AF26)_{16}$ to Binary.

18 Discuss the truth tables of NAND and NOR gates

19 Draw flowchart to find the largest among three different numbers entered by user.

20 Construct the logic circuit diagram for half adder using only NOR gates.

21 Differentiate Micro programmed and hardwired control units.

22 Briefly explain any *three* control devices.

(5 × 5 = 25 marks)

Part D

Answer any **two** *questions.*

23 What is primary memory ?

Explain a) RAM ; b) ROM ; c) PROM ; and d) EPROM.

24 What are combinational circuits ? Give a detailed description of the following :

a) Half adder ; b) Subtractor ; and c) Full Adder.

25 Convert the following :

a) $(101010)_2$ to Hexadecimal.

b) $(7564)_8$ to Binary.

c) $(8AF9)_{16}$ to Octal.

d) $(CF23)_{16}$ to Decimal.

e) $(100111)_2$ to Octal.

f) $(2376)_8$ to Hexadecimal.

g) $(DEF4)_{16}$ to Binary.

h) $(65211)_8$ to Decimal.

(2 × 10 = 20 marks)

D 13581 (Pages : 3) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS-UG) DEGREE EXAMINATION NOVEMBER 2021

Computer Science

BCS DS 1C 01—PYTHON PROGRAMMING

(2020 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer **all** *questions.*

Each correct answer carries a maximum of 2 marks.

Ceiling 20 marks.

1. Draw a flow chart to find the factorial of a number.
2. Write the desirable qualities of an algorithm.
3. List the relational and logical operators in Python.
4. Demonstrate format method with an example.
5. What is a local variable ?
6. What is a universal function ?
7. Illustrate fancy indexing with an example.
8. Give an example of structured array.
9. What is a list ? Give an example.
10. Differentiate between list and tuples.
11. What is an exception ?
12. Give a simple example of lambda function.

(Ceiling 20 marks)

Section B (Short Essay Type Questions)

Answer **all** *questions.*

Each correct answer carries a maximum of 5 marks.

Ceiling 30 marks.

13. Write an algorithm to print the first n terms in a Fibonacci series.

14. Write a Python program to read three integers and print them in ascending order.

15. Give the output or identify error(s) :

    i) for i in range (5):

        print (i)

    ii) for in range (2, 10, 2) :

        print (i)

    iii) x = ["Deepu", "Thampi", "Unni"]

    for I in x :

        print (i)

    iv) c=0

    while (c>5): c+=1; print "YYY"

16. Read an array of n integers between 0 and 255. Replace all values below 170 with 0s and all values equal to and above 170 with 1. Print the resultant array.

17. Write recursive and iterative functions to find the sum of first n natural numbers.

18. Explain the steps in accessing MySQL database using Python.

19. Explain the different types of function arguments with suitable examples.

(Ceiling 30 Marks)

Section C (Essay Type Questions)

Answer any **one** *questions.*

Correct answer carries a maximum of 10 marks.

20. Read *n* names into an array and sort them in alphabetic order. Print the sorted names along with serial number.

21. i) Illustrate python dictionary methods with suitable examples.

    ii) Demonstrate the creation of class and objects taking a suitable example.

(1 × 10 = 10 marks)

D 13580 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION, NOVEMBER 2021

Computer Science

BCS 1C 01—COMPUTER FUNDAMENTALS

(2019 to 2020 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer **all** *questions.*
Each correct answer carries a maximum of 2 *marks.*
Ceiling 20 *marks.*

1) Define BIT and BYTE.
2) What do you mean by number system ?
3) What is Hamming Code ?
4) Convert the following :
   a) $(67110)_{10}$ to binary.
   b) $(10110011)_2$ to decimal.
5) Write the truth table and logic symbol of NAND gate.
6) What is Memory ? State its type.
7) Write the four rules of Binary Addition.
8) Subtract the following 4-bit binary numbers.
   a) $1011_2 - 1001_2$.
   b) $1100_2 - 0110_2$.
9) What are the different types of printers ?
10) Mention different secondary storage devices.
11) How a light pen is used as an input device ?
12) Discuss in brief the purpose of Program planning.

Section B (Short Essay Type Questions)

Answer **all** *questions.*
Each correct answer carries a maximum of 5 *marks.*
Ceiling 30 *marks.*

13) Construct OR gate using any of the universal gates.
14) Define the characteristics of computer.

Turn over

15) Write the laws of Boolean algebra.

16) Describe various input devices of computer system.

17) Write the difference between a full adder and half adder.

18) List the hierarchy of computer memory with diagram.

19) Discuss any five Control devices.

Section C (Essay Type Questions)

Answer any **one** *question, correct answer carries* 10 *marks.*

20) List any two uses of :

a) Scanner.
b) Web Camera.
c) Mouse.
e) MIDI.
d) Touch Screen.

21) Compare and contrast the Algorithm and Flowchart.

(1 × 10 = 10 marks)

D 13579 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Computer Science

BCS 1B 01—COMPUTER FUNDAMENTALS AND HTML

(2019—2020 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer **all** *questions, each correct answer carries a maximum of* 2 *marks. Ceiling* 20 *marks.*

1. Differentiate between hardware and software.
2. Explain the functions performed by the Control unit of CPU.
3. How direct memory access takes place ?
4. Convert 0.4375 decimal to binary system.
5. What are the advantages of stored program computers ?
6. Define 'Minterm' and 'Maxterm'.
7. What is K-Map ?
8. Mention the role of frames in HTML.
9. What is HTML media tag ?
10. Differentiate Algorithm and flow chart.
11. Explain a typical structure of URL.
12. What is external style sheet in CSS ?

Section B (Short Essay Type Questions)

Answer **all** *questions, each correct answer carries a maximum of* 5 *marks. Ceiling* 30 *marks.*

13. What is the different types of Cache memory ?
14. State De-Morgan's theorem and mention its use.

15. Show the step-by-step division process when (– 160)/(+ 12) is computed.

16. Explain the working of an interpreter using a flow chat.

17. Differentiate XHTML and DHTML.

18. Explain any five Text formatting tags in HTML.

19. Discuss various CSS Styling with relevant examples.

Section C (Essay Type Questions)

Answer any **one** *question, correct answer carries* 10 *marks.*

20. Discuss any *five* types of Digital codes.

21. Generate html page for our own bio data (use all formatting tag) with CSS.

D 12621 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021

Computer Science

BCS DS 1C 01—PYTHON PROGRAMMING

(2021 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer at least **eight** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 24.

1. Draw a flow chart to find the largest among three numbers.
2. How does a procedure achieves modularity.
3. Give an example of nested IF statement.
4. What do you mean by broadcasting ?
5. Compare recursion and iteration.
6. Differentiate between NumPy arrays and structured arrays.
7. If total=76, then what is str(total) ?
8. If s = "FARHA" then what is the output of the following code:

   for e in s[: : -1]: print(e)
9. List any *four* aggregations.
10. List the types of function arguments.
11. What is PIP ?
12. What is self parameter ?

(8 × 3 = 24 marks)

Turn over

Section B (Short Essay Type Questions)

Answer at least **five** *questions.*
Each question carries 5 *marks.*
All questions can be attended.
Overall Ceiling 25.

13. Write an algorithm to print the largest among n integers.

14. Write a recursive function to find the factorial of a number.

15. Discuss FOR and WHILE constructs with suitable examples.

16. Write a program to read n integers into an array which includes both positive, zero and negative values. Replace all negative values with – 1, zeros with 0 and positive values with + 1. Also find the number of positive, negative and zero values. Print the results with appropriate formatting.

17. Demonstrate the use of tuples and dictionaries taking suitable examples.

18. Explain the steps in accessing MongoDB using Python.

19. Explain exception handling with an example.

(5 × 5 = 25 marks)

Section C (Essay Type Questions)

Answer any **one** *question.*
The question carries 11 *marks.*

20. (i) Read n numbers into an array and sort and print them in ascending order.

    (ii) Give examples of "list with different data types" and "nested list". Discuss accessing of list elements with examples.

21. (i) Write notes on : Universal Functions and structured arrays.

    (ii) Demonstrate the creation of class and objects taking a suitable example.

(1 × 11 = 11 marks)

D 12620 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021

Computer Science

BCS 1C 01—COMPUTER FUNDAMENTALS

(2021 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer at least **eight** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 24.

1. What is RAM ?
2. What is the function of CPU ?
3. Explain the representation of ASCII code.
4. What is a Register ?
5. Define algorithm.
6. List four control devices.
7. What is a touch pad ?
8. What is MIDI ?
9. What is magnetic stripe technology ?
10. What do you mean by secondary memory ?
11. What are combinational circuits ?
12. What is a flow chart ?

(8 × 3 = 24 marks)

Section B (Paragraph Type Questions)

Answer at least **five** *questions.*
Each question carries 5 *marks.*
All questions can be attended.
Overall Ceiling 25.

13. Explain XOR gate with truth table and diagram.
14. Convert the Hexadecimal number (1A5.2)16 to decimal, binary and octal number systems.
15. Explain Sum of Products (SOP) with an example.
16. Explain a half adder with its truth table.
17. Differentiate ROM and PROM.
18. Explain the pointing device mouse.
19. Write short notes on computer speakers.

(5 × 5 = 25 marks)

Section C (Essay Type)

Answer any **one** *question.*
The question carries 11 *marks.*

20. Explain different types of printers with its advantages and disadvantages.
21. Explain the theorems used in Boolean algebra.

(1 × 11 = 11 marks)

D 12619 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Computer Science

BCS 1B 01—COMPUTER FUNDAMENTALS AND HTML

(2021 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer at least **eight** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 24.

1. What is the function of CPU ?
2. What is SMPS ?
3. What is a Register ? Give the names of various registers.
4. What do you mean by add-on cards ? Give examples.
5. Explain ASCII code.
6. What is a Web server ?
7. What is the use of <embed>tag ?
8. What do you mean by a dynamic Web page ?
9. Write an HTML code to generate radio buttons in HTML.
10. What is <audio> tag in advanced HTML ?
11. What are the properties available in CSS for controlling fonts in CSS ?
12. How will you create superscript text and subscript text in HTML ?

(8 × 3 = 24 marks)

Section B (Paragraph Type Questions)

Answer at least **five** *questions.*
Each question carries 5 *marks.*
All questions can be attended.
Overall Ceiling 25.

13. Differentiate a compiler and interpreter. Give examples for programming languages that use interpreter and compiler.
14. Explain the 1's and 2's complement with an example.
15. What is Gray code ? Compare with BCD.
16. Explain the laws in Boolean algebra.
17. Write an algorithm and draw a Flow chart to check whether a number is odd or even.
18. Explain the formatting tags used for bold, italics and underlined text.
19. Write an HTML script to create a table with two columns Name and Salary and two rows for the table.

(5 × 5 = 25 marks)

Section C (Essay Type Questions)

Answer any **one** *question.*
The question carries 11 *marks.*

20. Explain embedded CSS, external CSS and inline CSS with examples.
21. Explain various symbols used in a flow chart. Give the advantages and limitations of flow charts.

(1 × 11 = 11 marks)

D 12485 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Computer Science

BCS 1C 01—COMPUTER FUNDAMENTALS

(2016—2018 Admissions)

Time : Three Hours Maximum : 64 Marks

Part A

Answer **all** *questions.*

Each question carries 1 *mark.*

1. $(10101)_2$ = (_____)$_{10}$.
2. In EBCDIC, the character representation of letter 1 is _____.
3. The output of a NOR gate is high if all inputs are _____.
4. The Boolean expression $A\overline{B}\left(A+\overline{B}\right)$ can be reduced to _____.
5. To interpret and executes various instructions, CPU uses a number of special memory units called _____.
6. _____ acts as a high speed buffer between CPU and main memory.
7. _____ is an input device that translates paper documents into an electric format for input to a computer.
8. _____ type of printers produce high quality output by forming characters and images with charged tiny ink particles.
9. In a computer system, the logic of a program is usually represented with the help of _____.

(9 × 1 = 9 marks)

Part B

Answer **all** *questions.*

Each question carries 2 *marks.*

10. Subtract $(011011)_2$ from $(110111)_2$ using 2's complement method.
11. Find the complement of the Boolean expression.

Turn over

12. What do you mean by a micro programmed control unit ?

13. What is a non-impact printer ?

14. Write an algorithm to find the sum of the digits of a given number.

(5 × 2 = 10 marks)

Part C

Answer any **five** *questions.*
Each question carries 5 *marks.*

15. Divide $(0110111)_2$ by $(0111)_2$.

16. Construct the logic circuit diagram for the Boolean expression using NOR gates only.

17. Draw the logic circuit of a full adder and explain it with the help of a truth table.

18. Explain the working of a laser printer.

19. Explain the use of registers in a CPU. Explain the significance of MAR, MDR, and IC.

20. An 8 bit binary value 10101111 is to be encoded using an even-parity Hamming code. What is the binary value after encoding ?

21. Explain how cache memory helps in improving overall performance of a computer system.

22. Draw a flowchart to find the greatest of three given numbers.

(5 × 5 = 25 marks)

Part D

Answer any **two** *questions.*
Each question carries 10 *marks.*

23. Explain any three popular number systems. Also explain with example how conversion from one number system to another can be done between the considered number systems.

24. a) Construct the logic circuit diagram for the Boolean expression using NOR gates only.

    b) Differentiate between random access and sequential access storage units.

25. Write short notes on :

    a) Memory hierarchy.

    b) Hardwired control unit.

    c) Advantages of using Algorithm and Flowchart in computer programming.

    d) Canonical forms of Boolean functions.

(2 × 10 = 20 marks)

D 12484 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION NOVEMBER 2021

Computer Science

BCS 1B 01—COMPUTER FUNDAMENTALS AND HTML

(2017—2018 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A (Short Answer Questions)

Answer **all** *the questions.*
Each question carries 1 *mark.*

1. What are the different functions performed by input unit ?
2. What is Language Translators ? Why it is important in computers ?
3. Explain BCD.
4. What is Postulates ? Explain
5. What is a Gray code ?
6. What are registers ?
7. Define URL.
8. What is the use of Formatting Tags in HTML ? Explain any two.
9. What is a Web Pages ?
10. What is class selector in CSS ? Explain.

(10 × 1 = 10 marks)

Part B (Short Paragraph Questions)

Answer **all** *the questions.*
Each question carries 3 *marks.*

11. What are the different features of a good language? Explain.
12. Define Minterms and Maxterms
13. Explain different Flowchart Symbols.

Turn over

14. Compare - HTML, XHTML, DHTML.

15. What are the different CSS fonts Properties ? Explain.

(5 × 3 = 15 marks)

Part C (Short Essay Questions)

Answer any **five** *questions.*
Each question carries 5 marks.

16. Differentiate between the characteristics of primary and secondary storage of a computer system.

17. What you mean by 1's and 2's Complements ? Explain complement subtractions.

18. Write an algorithm to check whether the given number is Prime Number or not.

19. What is a frame ? Advantage of using frames in HTML.

20. Explain in detail the audio and video tags in HTML media.

21. Draw a flowchart to find prime numbers between two ranges.

22. Write a note on URL, DNS and web server.

23. What is Sum of Product ? Convert $F = \sum(1, 2, 3)$ to Sum of Product Form.

(5 × 5 = 25 marks)

Part- D (Essay Questions)

Answer any **three** *questions.*
Each question carries 10 *marks.*

24. Draw a block diagram to illustrate basic organization of computer system and explain the functions of various unites.

25. Explain the principal of duality. What are the different theorems of Boolean algebra? Explain with its proof.

26. Explain features of HTML. Generate college admission form using HTML form tag

27. What are the different steps to Creating Style Sheet in inline and internal ? Explain.

28. Write short note on :
    a) ASCII Code and Unicode.
    b) Properties of flowcharts.
    c) www and Web Browsers.

(3 × 10 = 30 marks)

D 12483 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Computer Science

BCS 1B 01—PROBLEM SOLVING USING—C

(2016 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A

Answer on **all** *questions.*
Each question carries 1 *mark.*

1. An unsigned integer variable occupies ——— bytes of memory.
2. If the function returns no value, then it is called ——— function.
3. ——— character is used to indicate the end of the string.
4. ——— symbol is used to denote a pre-processor statement.
5. An ampersand before the name of a variable denotes ———.
6. Continue statement is used to go to the ——— iteration in a loop.
7. Maximum number of elements in the array declaration int a [5] [8] is ———.
8. ——— header file should be included to use functions like malloc() and calloc().
9. The fscanf() statement reads data from ———.
10. The switch statement is a multi-way branch statement (true/false).

(10 × 1 = 10 marks)

Part B

Answer all **five** *questions.*
Each question carries 2 *marks.*

11. What is the difference between "=" and "= =" ?
12. Explain the use of formal arguments ?
13. Explain methods for initialization of variable.
14. List the name of type modifiers. Explain any *one*.
15. Why break statement is essential in the switch statement. Explain.

(5 × 2 = 10 marks)

Turn over

Part C

Answer any **five** *questions.*
Each question carries 4 *marks.*

16. What are the different formatted input and output statements ? Explain each.
17. Write a program to input a list of numbers and find the prime number from the list.
18. What is a NULL character ? Why is it important ? Explain strcmp(), strlen() and strcpy() in detail.
19. Is it possible to pass structure variable to function ? Explain in detail the possible ways with example.
20. Explain merits and demerits of switch statement with syntax and example.
21. What do you mean by precedence of operators ? Explain with example ?
22. Write C program to search a number in an array and display its position
23. What do you mean by scope of a variable ? What are local and global variables ? Give examples.

(5 × 4 = 20 marks)

Part D

Answer any **five** *questions.*
Each question carries 8 *marks.*

24. What are operators ? Explain the different operators used in C.
25. What is a loop ? Why it is necessary in a program ? Explain various looping statements in C.
26. Write a program to find the largest of any three numbers using different categories/types of functions in menu driven program.
27. (a) Explain declaration, definition and initialization of structures. (3 marks)
    (b) Write a program to insert an element into an array. (5 marks)
28. How does the control string in printf() function is differ from the control string in scanf() function ? Explain. What are the different commonly used conversation characters in printf() functions with field specifiers.
29. Write a C program to find out sum of diagonal element of a matrix. Using user defined functions for read, write and sum.
30. How to define and open a file ? Write a program to appends one file at the end of another file.
31. Explain strings and its memory representation. Write a C program to count the number of vowels in a string.

(5 × 8 = 40 marks)