D 93934

(Pages :2) Name: .....

Reg. No.: .....

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

Information Technology

BIT 1C 202 FOUNDATIONS OF INFORMATION TECHNOLOGY

Time: Two Hours (2019 Admissions) Maximum : 60 Marks

Section A

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

1. What are the different types of processors?
2. What do you mean by cache memory?
3. What are the functions of arithmetic and logic unit?
4. List any four input devices.
5. Write the differences between CD and DVD.
6. What is an assembler?
7. What you mean by system software?
8. What is file allocation table?
9. What you mean by open source software?
10. What is a fire wall ?
11. What is cloud computing?
12. What are the major application area of Fortran and Cobol?

(8x3 = 24 marks)

Section B

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

13. Draw the blog diagram of a computer and explain
14. Explain the working of CRT monitor.

Turn over

15. Explain the characteristics of object oriented programming language

16. What are computer virus and explain how it can be managed?

17. Write advantage and disadvantage of social network?

18. What is an operating system? Write a short note on any two operating systems and its peculiarities.

19. Explain the use of GPS with the help of two application areas.

(5x5 = 25 marks)

Section C

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

20. Give a typical configuration of a computer for the purpose of office use. Write the importance of each component in the specification.

21. Explain the following in detail

a) Virtual LAN

b) GNU

c) OCR

d) Flash memory

e) EPROM

(1x11 = 11 marks)

D 93933 (Pages : 2) Name.....

Reg. No.....

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

Information Technology

BIT 1C 01—MATHEMATICAL FOUNDATIONS OF INFORMATION TECHNOLOGY

(2019 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A

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

1. What is the use of Complier ?
2. What is an Input device ? Give examples.
3. Briefly explain different types of Computer Software.
4. What is multitasking ? Give an example of multitasking operating system.
5. What is Modem ?
6. Define the term Internet.
7. What is Telnet ?
8. What is RAM ?
9. What is MICR ?
10. What is a Word Processor ?
11. What is a Free Software ?
12. What is Computer Viruses ?

(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. What are the difference between high-level and low-level languages ?
14. Explain various kinds of output devices of a computer system.

Turn over

15. What is the difference between an impact printer and a non-impact printer ?
16. What is a browser and how does it work ?
17. Explain different categories of computer viruses ?
18. Explain the role of multimedia in entertainment.
19. Explain the functions of an operating system.

(5 × 5 = 25 marks)

Section C

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

20. What are the different generations of computers ?
21. What is an Operating System ? Explain any three types of operating systems of a computer system.

(1 × 11 = 11 marks)

D 93932 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020

Information Technology

BIT 1B 01—PROBLEM SOLVING USING C

(2019 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A

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

1. What is static variable ?
2. What is the difference between Identifiers and Keywords ? Give examples.
3. What is size of operator ?
4. Explain if..else statement with an example.
5. Explain do loop with an example.
6. What is meant by call-by-value ?
7. Explain the use of goto statement in C.
8. Explain while loop with an example.
9. What is an Array ? Give example.
10. What is meant by recursion ?
11. What is meant by call-by-reference ?
12. What is a null pointer ?

(8 × 3 = 24 marks)

Turn over

Section B

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

13. Explain the difference between a structure and a union with suitable examples.
14. What is pointer to an array ? Give example.
15. What are the arithmetic operations that can be applied on pointer variables ?
16. Explain the difference between Entry-Controlled-Loop and Exit-Controlled-Loops with suitable loop constructs and examples.
17. What are different types of initialization of an array ? Explain with examples.
18. What are the various modes of opening a file in C ?
19. What is a Macro ? Give example.

(5 × 5 = 25 marks)

Section C

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

20. List and discuss the different storage class specifications in C language.
21. Write a program to find largest and second largest elements in an array.

(1 × 11 = 11 marks)

D 93821 (Pages : 4) Name.....

Reg. No.....

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

(CUCBCSS—UG)

Information Technology

BIT 1C 01—MATHEMATICAL FOUNDATIONS OF INFORMATION TECHNOLOGY

(2014—2017 Admissions)

Time : Three Hours Maximum : 80 Marks

Section A

Answer **all** *questions.*

Each question carries 1 *mark.*

1. Define an upper triangular matrix.
2. Is the matrix $\begin{bmatrix} 1 & 2 \\ 2 & 3 \end{bmatrix}$ symmetric ?
3. Find the rank of $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 4 & 6 \end{bmatrix}$.
4. Define a non-singular matrix.
5. If two vectors are perpendicular, what can you say about their dot product ?
6. Find $\frac{dy}{dx}$ if $y = \sqrt{\tan x}$.
7. Find derivative of $\sin\left(2x^2 + 5\right)$.
8. What do you mean by characteristic equation of a matrix ?
9. Find $\int \left(\frac{1}{x} + \sec x \tan x\right) dx$.
10. Find $\int \frac{1}{1+x^2}\, dx$.

(10 × 1 = 10 marks)

Turn over

Section B

Answer **all** *questions.*

Each question carries 2 *marks.*

11. For what value of x is $\begin{bmatrix} 2 & -1 \\ 4 & x \end{bmatrix}$ singular ?

12. Write a skew symmetric matrix using the matrix $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$.

13. Find a if $\begin{bmatrix} 2a+3 & 4 \\ 3 & 2 \end{bmatrix} = \begin{bmatrix} 7 & 4 \\ 3 & 2 \end{bmatrix}$.

14. If $\vec{A} = 4\hat{i} + 3\hat{j} + \hat{k}$, $\vec{B} = 2\hat{i} - \hat{j} + \hat{k}$ then find $\vec{A} \times \vec{B}$.

15. Find $\frac{dy}{dx}$ if $y = \frac{\sin x}{x}$.

16. Find $\frac{dy}{dx}$ if $y = \sqrt{x} \log x$.

17. Find $\int x^{\frac{7}{2}}\, dx$.

18. Evaluate $\int_0^{\frac{\pi}{4}} \sec^2 x\, dx$.

(8 × 2 = 16 marks)

Section C

Answer any **six** *questions.*

Each question carries 4 *marks.*

19. If $A = \begin{bmatrix} 1 & 4 \\ 2 & 3 \end{bmatrix}$, then prove that $A^2 - 4A - 5I = 0$.

20. Express the matrix $\begin{bmatrix} 4 & 2 & -3 \\ 1 & 3 & -6 \\ -5 & 0 & -7 \end{bmatrix}$ as the sum of a symmetric and skew symmetric matrix ?

21. Find the Eigen values of $\begin{bmatrix} 2 & 0 & 1 \\ 0 & 2 & 0 \\ 1 & 0 & 2 \end{bmatrix}$.

22. If $A = \begin{bmatrix} 2 & 0 \\ 3 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 1 \\ 2 & 4 \end{bmatrix}$ verify that $(AB)^{-1} = B^{-1}A^{-1}$.

23. Find $\frac{dy}{dx}$ if $y = x \sin^{-1} x$.

24. Evaluate $\int \cos^3 x \sin x \, dx$.

25. Evaluate $\int \frac{1}{1 - \sin x} dx$.

26. Evaluate $\int_0^1 x e^x \, dx$.

27. Evaluate $\int_{-1}^{1} \left(x^3 - \frac{1}{x^3} \right) dx$.

(6 × 4 = 24 marks)

Section D

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

28. (a) If $\vec{A} = \hat{i} + 2\hat{j} + 3\hat{k}$, $\vec{B} = -\hat{i} + 2\hat{j} + \hat{k}$ and $\vec{C} = 3\hat{i} + \hat{j}$, find t such that $\vec{A} + t\vec{B}$ is perpendicular to $\vec{C}$.

(b) Find a unit vector normal to the plane of $\vec{A} = 3\hat{i} - 2\hat{j} + 4\hat{k}$ and $\vec{B} = \hat{i} + \hat{j} - 2\hat{k}$.

29. (a) Solva by Gauss Elimination :

$$x + 2y + z = 3$$
$$2x + 3y + 2z = 5$$
$$3x - 5y + 5z = 2$$
$$3x + 9y - z = 4.$$

(b) If $\begin{vmatrix} 4 & 2 \\ 3 & x \end{vmatrix} = 0$, find x.

30. (a) Find $\frac{dy}{dx}$ if $y = (\log x)^{\cos x}$.

(b) Find $\frac{dy}{dx}$ if $y = \tan^2 \sqrt{x}$.

31. (a) Find $\int \frac{x}{(x+3)(x-2)}\, dx$.

(b) Find $\int x \log x\, dx$.

32. (a) Evaluate $\int_1^e \frac{\log^2 x}{x}\, dx$.

(b) Evaluate $\int_0^1 \frac{\tan^{-1} x}{1+x^2}\, dx$.

(3 × 10 = 30 marks)

D 93787 (Pages : 4) Name.....

Reg. No.....

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

(CUCBCSS)

Information Technology

BIT 1B 01—PROBLEM SOLVING USING C
(Common for 2014 and 2017 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A

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

1. Step by step instruction to solve a specific problem is known as ————.

   (A) Program. (B) Flow chart.

   (C) Algorithm. (D) Pseudocode.

2. Which symbol is used as a statement terminator in C ?

   (A) !. (B) ~.

   (C) ;. (D) #.

3. By default a real number in C is treated as ————.

   (A) Float. (B) Double.

   (C) Long double. (D) Long int.

4. Which of the following shows correct hierarchy of arithmetic operators in C ?

   (A) / + * -. (B) * - / +.

   (C) + - / *. (D) * / + -.

5. The default parameter passing mechanism in C is ————.

   (A) Call by reference. (B) Call by address.

   (C) Call by name. (D) Call by value.

6. What will be the output of the following program code ?

```
#include<stdio.h>
int main( )
{
    int i=0;
    for(; i<=5; i++)
        printf(" %d, ", i);
    return 0;
}
```

(A) 0, 1, 2, 3, 4, 5. (B) 5.

(C) 6. (D) 1, 2, 3, 4.

7. What will be the output of the following program code ?

```
#include<stdioh>
#define prod(a,b)          a* b
void main[ ]
{
   int x=3,y=4;
   printf("%d", prod(x+2,y–1);
}
```

(A) 15. (B) 12.

(C) 10. (D) None of the above.

8. An array elements are always stored in ——— memory locations.

(A) Random. (B) Sequential.

(C) Sequential and Random. (D) None of the above.

9. In C, if you pass an array as an argument to a function, what actually get passed ?

(A) Value of elements in the array.

(B) First element of the array.

(C) Base address of the array.

(D) Address of the last element of the array.

10. A pointer is ———.

    (A) A keyword used to create variables.

    (B) A variable that stores the address of an instruction.

    (C) A variable that stores the address of another variable.

    (D) All of the above.

(10 × 1 = 10 marks)

Part B

Answer **all** *questions.*

Each question carries 2 *marks.*

11. How will you compile and execute C program in Linux.

12. Distinguish between Identifiers and Constants in C.

13. Explain the structure and function of if... else with example.

14. How will you define and initialize strings in C ?

15. What do you mean by pointer to a pointer variable ?

(5 × 2 = 10 marks)

Part C

Answer **five** *questions.*

Each question carries 4 *marks.*

16. What are the different procedures for evaluating the efficiency of a program ? Explain.

17. Write a note on different arithmetic and logical operators in C.

18. Explain the differences between exit-control and entry-control loop construct in C with example.

19. Explain the scope and life time of variables in C.

20. Write a program to compute the factorial of a number using recursion.

21. What is string ? How will you define and initializes string variables in C with examples.

22. Write a note on command line arguments in C.

23. Explain the different file accessing modes in C.

(5 × 4 = 20 marks)

D 10651 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

INFORMATION TECHNOLOGY

BIT 5B 09—SOFTWARE ENGINEERING

(2019 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A

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

1. Differentiate the terms 'Programs' and 'Products'.
2. Mention the changes in software development practices.
3. Explain the role of 'document' in a development process.
4. Briefly describe the organization of SRS document.
5. What are the advantages of functional independence of a module ?
6. Who are the users of SRS document?
7. Point out the problems suffered by SRS document.
8. What are the characteristics of a good user interface.
9. Point out the important steps in the Black box test suite design approach.
10. Mention the factors used in defining software quality.
11. What is ISO 9000 certification ?
12. What are the benefits of using a CASE environment ?

(8 × 3 = 24 marks)

Turn over

Section B (Paragraph Type Question)

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

13. Describe 'Classical waterfall model'.
14. What are the characteristics of 'good SRS document' and 'bad SRS document' ?
15. Explain the different categories of user requirements.
16. Why Data Flow Diagrams (DFD) are so popular ? Explain.
17. What are the characteristics of a good user interface ?
18. Write a note on System testing and its various types.
19. Compare 'object oriented' versus 'function oriented' design approach.

(5 × 5 = 25 marks)

Section C

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

20. What is the significance of SRS document in Requirement Analysis ?
21. Compare Black box testing and White box testing.

(1 × 11 = 11 marks)