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Reg. No. :

Name :

**First Semester B.Sc./B.Com./B.B.A./B.C.A./B.S.W./B.M.S./B.Voc. Degree
Examination, March 2023.**

Career Related First Degree Programme under CBCSS

Group 2(b) – Language Course – English

EN 1111/EN 111/ EN 1111.4 – LANGUAGE SKILLS

(2019 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

- I. Answer **all** questions, each in a word or a sentence.
1. Define communication.
2. Give an example of a two syllable word.
3. Mention any two mediums of communication.
4. _____ is called the study of body language.
5. _____ is the physical manifestation of language.
6. What is the full form of CV?
7. What is the meaning of the French word 'Resume'?
8. The person who gets the end product of communication is called _____
9. Define blogs.
10. What is podcast?

(10 × 1 = 10 Marks)

P.T.O.

II. Answer **any eight**, each in a short paragraph not exceeding **50** words.

11. What is meant by netiquette?
12. Process of communication.
13. Components of communication
14. Types of podcast
15. Soft skills
16. Hard skills
17. What is non-verbal communication?
18. Why do we need a CV?
19. Barriers to effective listening.
20. What is phonetics?
21. Define linguistics.
22. What is a foreign language?

(8 × 2 = 16 Marks)

III. Answer **any six**, each in a paragraph not exceeding **100** words.

23. Read the following passage and answer all the questions that follow.

Opera refers to a dramatic art form, originating in Europe, in which emotional content is conveyed to the audience as much through music, both vocal and instrumental, as it is through the lyrics. By contrast, in musical theatre an actor's dramatic performance is primary and the music plays a lesser role. The drama in opera is presented using the primary elements of theatre such as scenery, costumes and acting. However the words of the opera, or libretto, are

sung rather than spoken. The singers are accompanied by a musical ensemble ranging from a small instrumental ensemble to a full symphonic Orchestra.

- (a) What is meant by opera?
 - (b) How is musical theatre different from opera?
 - (c) How are the lyrics in opera conveyed?
 - (d) Who accompanies the singers in an opera?
24. Write a script for hosting a chat show with a famous entrepreneur.
 25. Prepare a speech on the essence of discipline to succeed in life.
 26. Mention ten telephonic exchanges between yourself and the manager of a company where you have been promoted to a post of division manager.
 27. Write a blog on the importance of economic independence for women after marriage.
 28. Write an email to an academic inviting him/her to be the guest of honour in a talk series hosted by your college.
 29. Write a script for a podcast on the freedom of speech.
 30. Edit the passage.

The auditorium were decorated with buntings. Chairs have been neatly arranged in rows for the invitees. The dias have a beautiful backdrop. The principle escorts the chief guest to the stage when they all occupy there seats, two girls, sing the prayer.

31. Prepare minutes of a meeting conducted by the literary club. You are the secretary of the club and the meeting is related to the celebration of literary week.

(6 × 4 = 24 Marks)

IV. Answer **any two** each in about **300** words.

32. Write a book review on a favorite novel you have read.
33. Prepare a blog on creating awareness about the growing use of Artificial Intelligence in the field of liberal Arts.
34. Prepare a CV and a covering letter for the post of Research Assistant in a reputed institution in a response to an advertisement that has appeared in a daily.
35. The following passage is in a jumbled manner. Arrange them in the correct order so as to make a sensible passage.

Scientists have for the first time managed to edit genes in a human embryo to repair a genetic mutation, fueling hopes that such procedures may one day be available outside laboratory conditions. The Cardiac disease causes sudden death in otherwise healthy young athletes and affects one in 500 people overall. Correcting the mutation in the gene would not only ensure that the child is healthy but also prevents transmission of the mutation to future generations. It is caused by a mutation in a particular gene and a child will suffer from the condition even if inherits only one copy of the mutated gene. In results announced in Nature this week, scientists fixed a mutation that thickens the heart muscle, a condition called hypertrophic cardiomyopathy.

(2 × 15 = 30 Marks)

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P – 8037

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, March 2023
Career Related First Degree Programme Under CBCSS
Computer Science
CS 1122 — VALUE EDUCATION
(2021 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Write short answers to the below ten questions in **one** or **two** sentences.

1. Name the three basic components of NSS?
2. When was NSS launched? Signify the importance of that year.
3. When is a stress positive?
4. Mention the motto of NCC?
5. What is the NCC symbol?
6. Which Ministry at the National level deals with NCC?
7. What is biological disaster?
8. Explain hazard?

P.T.O.

9. Name the **four** main pillars of Indian Constitution.
10. How many articles are there in Indian Constitution?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions in not exceeding **one** paragraph each. Each question carries **2** marks.

11. Express your views on the health awareness programme of NSS volunteers.
12. Why does NSS adopt any one village at a time?
13. How do you set goals in time management?
14. Write about any two camp trainings given for NCC cadets.
15. List out and describe the adventure based learning in NCC.
16. How do you define a hazardous material? Explain the types.
17. What are the major psychological impacts of disaster?
18. What are the three broad categories of hazard?
19. How coastal flooding is caused?
20. Explain preamble on Indian constitution.
21. List out the five basic human rights.
22. What do you mean by right of religious freedom?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions in not exceeding **120** words. Each question carries **4** marks each.

23. What are the standard activities of NSS in India?
24. What are the ways in which you can improve self-esteem?

25. What is the aim of NCC?
26. How is the selection process for YEP done?
27. Explain the activities under the response phase of disaster management.
28. List out some of the causes of earthquake.
29. What are the types of equality mentioned in the 'Right of Equality' in the fundamental?
30. What are the rights given in the 'Rights to Freedom' in the Indian constitution?
31. Describe the five constitutional remedies.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions in not exceeding **4** pages each. **Each** question carries **15** marks.

32. List the various Youth Development Programmes at the National level and explain them in short.
33. Write in brief the steps in the selection process of NCC cadets in RDC?
34. Discuss the four phases of disaster management in detail.
35. Explain the seven fundamental rights which were originally provided by the Constitution.

(2 × 15 = 30 Marks)

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P – 8036

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, March 2023

Career Related First Degree Programme under CBCSS

Computer Science

CS 1121 : COMPUTER FUNDAMENTALS AND PROGRAMMING IN C

(2021 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A (Very Short Answer Type)

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

1. What is hit ratio?
2. Expand CMOS.
3. What are the data types in 'C' Programming?
4. What is an algorithm?
5. Write down the syntax for array declaration in C.
6. What is size of 'char' datatype?
7. What is meant by scope of a variable?
8. What is the role of registers in computers?
9. List down any two file handling functions.
10. What is a string?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B (Short Answer Type)

Answer **any eight** questions. Each carry **2** marks.

11. Write notes on storage devices.
12. What are the main characteristics of Control Unit in a computer?
13. What is virtual memory? Explain.
14. What is a variable? List down rules for variable declaration in C?
15. State the difference between '=' and '==' operators.
16. Define type conversion in C.
17. Explain syntax of for loop in C.
18. What is user defined function?
19. Explain the syntax for structure declaration.
20. Differentiate between text and binary files.
21. What is fwrite() and fread() functions?
22. What is dynamic Memory allocation?

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

Answer **any six** questions. Each carry **4** marks.

23. What is cache memory? Explain.
24. Write a C program to output largest of two numbers using function.
25. What are the different symbols used for drawing flow chart? Explain.

26. Explain the working of `printf()` and `scanf()` functions with their respective syntax and examples.
27. Differentiate between 'do --- While' and 'while' loop with example.
28. What is the use of 'break' and 'continue' statements. Explain with examples.
29. Explain Union in C with example
30. Write notes on '`strcmp()`' '`strlen`' and '`strcpy()`' function.
31. Write notes on '`malloc()`' and '`free()`' function.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

Answer **any two** questions. Each carry **15** marks.

32. Write down algorithm and C program to find average of N numbers.
33. What is an operator? What is meant by precedence of operators? Explain difference between Logical Operator and Relational Operators.
34. What are structures? Write down a program to discuss operations on structures.
35. Discuss about pointers in C.

(2 × 15 = 30 Marks)

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P – 8042

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, March 2023

Career Related First Degree Programme under CBCSS

Mathematics

Complementary Course for Computer Science

MM 1131.10 : MATHEMATICS — I CALCULUS AND NUMBER THEORY

(2019 Admission onwards)

Time : 3 Hours

Max. Marks : 80

PART – A

Answer **all** questions. These questions carry 1 mark each.

1. $\sinh^2 x + \cosh^2 x = \text{_____}$.

2. Write the equation of a hanging cable.

3. Find the 100th derivative of e^{-3x} .

4. Evaluate : $\int \frac{dx}{\left(\frac{1}{3}x - 8\right)^5}$.

5. Estimate : $\int \frac{1}{x^2 + 2x + 1} dx$.

6. Solve : $(D^2 - 2D + 1)y = 0$.

P.T.O.

7. Solve : $\frac{dy}{dx} = xe^x$.
8. Find all positive common divisors of : (i) 30 and 45 (ii) 18 and 65.
9. Check whether $1325 \equiv 1 \pmod{9}$.
10. State Wilson's theorem.

(10 × 1 = 10 Marks)

PART – B

Answer **any eight** questions. These questions carry **2** marks each.

11. If $y = e^{-x} \cos x$, show that $\frac{d^4 y}{dx^4} + 4y = 0$.
12. State the Leibnitz's theorem for the n^{th} derivative.
13. Compute the derivative of $\sinh^{-1} x$.
14. Estimate : $\int \frac{2x+3}{x^2+x+1} dx$.
15. Find $\int x \sin x dx$.
16. Estimate : $\int \frac{3x^2}{x^6+2x^3+1} dx$.
17. Solve : $(D^2 - 5D + 6)y = 2e^{4x}$.
18. Find the particular integral of $(D^2 + 16)y = \cos 4x$.
19. Find the complementary function of $x^2 \frac{d^2 y}{dx^2} - x \frac{dy}{dx} + y = \log x$.

20. Find a number a which satisfies $a \equiv 5 \pmod{8}$ and $a \equiv 3 \pmod{7}$ simultaneously.
21. Find two numbers a and b such that $\phi(ab) \neq \phi(a)\phi(b)$.
22. Check whether the following pairs are relatively prime :
- (a) 1 and 637
- (b) 20248 and 20206
- (c) 11 and 12
- (d) 10 and 125

(8 × 2 = 16 Marks)

PART – C

Answer any six questions. These questions carry 4 marks each.

23. Show that $\cosh^{-1} x = \ln(x + \sqrt{x^2 - 1})$.
24. Find the n^{th} derivative of $e^x (2x + 3)^3$.
25. Estimate : $\int \frac{x^3}{(x-1)(x-2)} dx$.
26. Find the area of the surface that is generated by revolving the portion of the curve $y = x^3$ between $x = 0$ and $x = 1$ about the x -axis.
27. Find the arc length of the curve $y = 3x^{3/2} - 1$ from $x = 0$ to $x = 1$.
28. Solve : $(1-x)^2 \frac{d^2y}{dx^2} + (1+x) \frac{dy}{dx} + y = 2 \sin \log(1+x)$.
29. Solve : $(D^2 - 2D + 2)y = e^x \cos x$.

30. State Euclid's algorithm.

31. Find the least nonnegative residue of $12^{100} \pmod{34}$.

(6 × 4 = 24 Marks)

PART – D

Answer any two questions. These questions carry 15 marks each.

32. (a) If $y = xe^x$, then prove that $xy_1 - (x+1)y = 0$ and hence show that

$$xy_{n+1} + (n-x-1)y_n - ny_{n-1} = 0$$

(b) Prove : $(\cosh x - \sinh x)^n = \cosh nx - \sinh nx$.

33. (a) Find the area of the region that is enclosed between the curves $y = x^2$ and $y = x + 6$.

(b) Find the volume of the solid that is obtained when the region under the curve $y = \sqrt{x}$, over the interval $[1, 4]$ is revolved about the x-axis.

34. Solve : $\frac{dx}{dt} - 3x - 2y = 0$; $\frac{dy}{dt} + 5x + 3y = 0$.

35. (a) Using Euclidean algorithm find the greatest common divisor d of 365 and 1876. Also find two integers x and y such that $d = 365x + 1876y$.

(b) Compute $\phi(1024)$

(2 × 15 = 30 Marks)

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P – 8046

Reg. No. :

Name :

First Semester B.Sc./BCA Degree Examination, March 2023

Career Related First Degree Programme under CBCSS

Computer Science/Computer Applications

CS 1132/CP 1131 : DIGITAL ELECTRONICS

(2021 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A (Very short answer type)

One word to maximum of **one** sentence. Answer **ALL** questions.

1. The base of hexadecimal number system is _____
2. _____ are edge triggered.
3. The shift register PIPO stands for _____
4. Name two types of parity codes.
5. How many bits are needed to store one BCD digit?
6. Convert $(312)_8$ into decimal.
7. What is the result of addition of the binary numbers $101001 + 010011$?
8. 1's complement of 1011001 is _____

P.T.O.

9. The excess-3 code for 584 is given by _____
10. The Minterms for four variables is _____

(10 × 1 = 10 Marks)

SECTION – B (Short Answer)

Not to exceed **one** paragraph, answer any **eight** questions. Each question carries **2** marks.

11. What is a full wave rectifier?
12. What is a transistor?
13. What is an oscillator?
14. Convert a) 1001001_2 into a hexadecimal b) 127_{10} to octal.
15. Which gates are known as universal gates? Mention its advantage.
16. Name the two forms of Boolean expression.
17. What are Minterm and Maxterm?
18. What are the applications of Multiplexer (MUX)?
19. What is a demultiplexer?
20. What do you mean by combinational logic circuit?
21. What is a synchronous counter?
22. Mention any four rules of Boolean algebra.

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

Not to exceed **120** words, answer any **six** questions. Each question carries **4** marks.

23. Explain PNP transistor with its symbol.
24. State De Morgan's theorem with its truth table.

25. Mention the advantages of K-map.
26. Explain encoders with block diagram and truth table.
27. Explain logic OR gate.
28. Explain the NOR gate with logic design and truth tables.
29. Explain subtraction using 2's complement.
30. Explain comparator with its block diagram.
31. Represent the numbers from 1 to 15 in binary and Gray code.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

Answer any **two** questions. **Each** question carries **15** marks.

32. Explain half adder and full adder with circuit diagram and truth tables.
33. Explain various shift registers.
34. Explain in detail the D flip-flop.
35. Using K-map, simplify the Product-Of-Sums Boolean expression below, providing a result in SOP form.

$$\text{Out} = (A+B+C+\bar{D})(A+B+\bar{C}+D)(A+\bar{B}+C+\bar{D})(A+\bar{B}+\bar{C}+D)$$

$$(\bar{A}+\bar{B}+\bar{C}+D)(\bar{A}+B+C+\bar{D})(\bar{A}+B+\bar{C}+D)$$

(2 × 15 = 30 Marks)