

(Pages : 4)

S – 2979

Reg. No. :

Name :

**First Semester B.Sc./B.Com./B.B.A./B.C.A./B.M.S./B.S.W./B.Voc. Degree
Examination, January 2024**

Career Related First Degree Programme under CBCSS

Language Course I – English

EN 1111/EN 111/EN 1111.4 : LANGUAGE SKILLS

(Common for Career Related 2(b) and B.Voc. Programmes)

(2019 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

1. Answer in a word or sentence. All questions carry 1 mark each.
1. Who proposed Communication theory?
2. What is Entropy in communication?
3. RP means _____.
4. How many vowels are there in English RP?
5. _____ is a portmanteau made of iPod and broadcasting.
6. Who is an Anchor?
7. What are the four types of reading?
8. What is copy editing?
9. What is a CV?
10. What is a blog?

(10 × 1 = 10 Marks)

P.T.O.

- II. Answer any **eight** questions in a short paragraph of 50 words.
11. Suggest a few ways to get a good posture.
 12. The use of gestures in communication.
 13. Explain plagiarism.
 14. What are the four main types of writing? Give examples.
 15. The barriers to reading.
 16. How can one develop good speaking skills?
 17. Use of mobile phone to improve communication skills.
 18. Describe Active listening.
 19. What is word stress? Give examples.
 20. Define falling intonation in English, with examples.
 21. What are the eight major components in communication?
 22. Give any four barriers to effective communication.

(8 × 2 = 16 Marks)

- III. Answer any **six** questions in around **100** words.

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

Several factors contribute to the lower likelihood of girls attaining optimal education levels. These include societal expectations that girls should assist their mothers in domestic responsibilities, cultural norms that dictate a predetermined role in domestic work for girls, the presence of illiterate mothers unable to provide education, economic reliance on men, and the prevalence of child marriage. Many impoverished families marry off their daughters early, believing that investing in her is more valuable when she stays at home. Early marriage is also fuelled by the notion that it ensures early reproduction. In 1986, India established the National Policy on Education (NPE) and initiated the Mahila Samakhya program, aiming to empower women by creating a conducive learning environment. Progress has been observed in certain regions of India, with an

increase in girl's school enrolment and their participation as teachers. Although female literacy surpassed 50% of the overall female population by 2001, these figures remained significantly below global standards and even male literacy rates in India. Ongoing efforts persist to elevate the educational standards for females bridging the gap with their male counterparts.

- (a) Give any three contributing factors to why girls are less likely to attain optimal education levels.
 - (b) Why do some impoverished families choose to marry off their daughters early?
 - (c) What programme was launched in India in 1986 and with what purpose?
 - (d) What progress was observed with regards the 1986 project and how did it compare to the global standards?
24. Write a script for an anchor who is hosting a celebrity fashion show.
 25. Prepare a speech on the issues faced by women in the film industry.
 26. Write a telephonic conversation between you and a police officer who is calling you with regard to a crime committed in your area. Write at least ten exchanges.
 27. Write a blog on a local hero from your region.
 28. Write an email to an award winning writer, inviting her to inaugurate the Literary Club in your college.
 29. Write the script for a podcast on the latest trends in higher education.
 30. You are the Arts Club Secretary of your college. Prepare the minutes of a meeting conducted by the Club with regard to conducting the Arts competitions.
 31. Edit the passage given below.

Yesterday i visited the park with my friend. We saw many colourful flowers, and the weather was perfect for a picnic. we bring sandwiches and chips, but we forgot to bring water. It was a big mistake because we got thirsty after walking for a while. we decide to buy water from a vendor in the park. I have a great time with my friend; we talk and laugh a lot. After that, we played near the lake. At the end of the day, we feel tired but happy.

(6 × 4 = 24 Marks)

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

32. Write notes on the following passage.

Secularism denotes the principle of separating the affairs of the state from those of religious entities. This ideology holds immense significance in a democratic nation, particularly one characterized by a diverse populace practicing various religions. It serves to safeguard the freedom of expression and beliefs for all individuals, contributing to the peaceful functioning of the state.

India, with its amalgamation of religions including Hinduism, Islam, Buddhism, Sikhism, etc., has successfully embraced secularism as a cornerstone of its democratic framework. This commitment ensures impartial treatment of citizens in all spheres, irrespective of their caste, religion, or beliefs. The incorporation of secularism into the constitutional fabric not only upholds fundamental rights such as freedom of expression and religious freedom but also addresses the potential for religious conflicts in a country with a multitude of faiths.

In the historical context, attempts by majority groups to assert dominance over minorities or governmental structures have been mitigated by the implementation of secularism. By functioning independently from religious entities, secularism grants equal freedom to all religions and castes, serving as a check against potential imbalances. Although there are inherent threats and challenges to secularism, it remains the duty of a secular state to tirelessly pursue the goal of fostering peace and understanding among diverse religious communities. This approach allows the seamless operation of government institutions while affording fundamental rights to every citizen, irrespective of their caste, religion, or beliefs.

In conclusion, the introduction of secularism in a diverse country like India proves to be a boon, enabling individuals to express their opinions freely and openly practice the religion of their choice, or opt not to practice any religion at all.

33. Narrate an incident that you consider the turning point in your life.

34. Write a paragraph each on **any two** topics:

(a) Tourism (b) Pollution in the city (c) Women oriented cinema

35. You are applying to the post of a Spoken English trainer in a reputed firm in the city. Prepare a cover letter and CV for the same.

(2 × 15 = 30 Marks)

(Pages : 3)

S – 3043

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, January 2024

Career Related First Degree Programme under CBCSS

Computer Science

CS 1122 : VALUE EDUCATION

(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. NSS is the short name of _____
2. Practicing national integration is not an aim of NSS. True/False.
3. _____ is how we value and perceive ourselves.
4. Expand CATC.
5. Define Hiking.
6. Where is Thal Sainik camp held?
7. Hazard is a process in disaster management. True/False
8. Article 360 related to _____
9. Define Rule of Law.
10. Equality and respect for all cultures offered by _____ right.

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B (Short Answer)

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

11. Write the aim of NSS.
12. Define the term self-confidence.
13. Write the role of NSS Diary.
14. List the committees of NCC.
15. Describe the motto of NCC.
16. What is the aim of NauSainik Camp?
17. Define the term disaster.
18. What do you mean by resilience.
19. Write a note on family emergency.
20. What is meant by preamble of Indian Constitution?
21. What is right to constitutional remedies?
22. Explain objectives of NSS.

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

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

23. Write a note on positive thinking.
24. Discuss various stress management activities.
25. Describe in detail about Advance Leadership course.
26. Write a detailed note on aims and objectives of All India Yatching Regatta.
27. Elaborate the role of Youth Exchange Programmes in achieving the aim of NCC.
28. Write a note on impact of national disaster in gender and age.
29. Elaborate any four major hazardous materials in India.

30. List the fundamental rights of Indian constitution.
31. What do you mean by Right Against Exploitation? Explain.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

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

32. Describe NSS Programmes and activities in detail.
33. Explain the functions and duties of NCC.
34. Write a detailed note on classification of disaster.
35. Describe Right to Freedom in detail.

(2 × 15 = 30 Marks)

(Pages : 4)

S – 3049

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, January 2024

Career Related First Degree Programme under CBCSS

Mathematics

Complementary Course for Computer Science

MM 1131.10 : MATHEMATICS – I

(2023 Admission)

Time : 3 Hours

Max. Marks : 80

PART – A

All the first ten questions are compulsory. They carry 1 mark each.

1. Find the value of $\sinh 0$.
2. $\text{Cosh}^{-1}x = \underline{\hspace{2cm}}$.
3. Calculate the determinant of the matrix.

$$\begin{pmatrix} 3 & -2 \\ 7 & 4 \end{pmatrix}$$

4. Determine $(3i+2j+2k)-(4i-3j+2k)$.
5. Define planar graph.
6. Define tree in graph theory.

P.T.O.

7. Find the greatest common divisor of 16 and 48.
8. State the fundamental theorem of arithmetic.
9. Find the value of $\phi(15)$.
10. State Division Algorithm.

(10 × 1 = 10 Marks)

PART – B

Answer any **eight** questions. They question carry 2 marks each.

11. Find $\frac{d}{dx} [\ln(x^2 + 1)]$.
12. State and prove sum rule of differentiation.
13. Show that $\frac{d}{dx} (\sinh^{-1} x) = \frac{1}{\sqrt{x^2 + 1}}$.
14. Determine the inverse of $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$.
15. If $P = 2i + j - k$ and $q = i - 3j + 2k$ determine $p \cdot q$.
16. Determine the angle between vectors α and β .
 $\alpha = i + 2j - 3k$
 $\beta = 2i - j + 4k$
17. What is mean by a Hamiltonian circuit? Give an example to explain it.
18. Define an isolated vertex and pendant vertex with one example each.
19. Find $12^{39} \text{ mod }_{13}$.

20. Find a solution of $18x \equiv 12 \pmod{20}$.

21. Find the gcd of 84 and 217.

22. Determine AB , where

$$A = \begin{bmatrix} 3 & -1 \\ -4 & 7 \end{bmatrix} \text{ and } B = \begin{bmatrix} 5 & 2 \\ -1 & 6 \end{bmatrix}.$$

(8 × 2 = 16 Marks)

PART – C

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

23. Solve $\frac{e^x - e^{-x}}{2} = 1$ for x .

24. Find $\frac{d}{dx}(\sin \sqrt{1 + \cos x})$.

25. Find the directional cosine of $3i + 2j + k$.

26. Prove that $\cosh(x + y) = \cosh x \cosh y + \sinh x \sinh y$.

27. Solve the following simultaneous equation using Gaussian elimination.

$$x + y + z = 4$$

$$2x - 3y + 4z = 33$$

$$3x - 2y - 2z = 2$$

28. For the vectors $a = i + 4j - 2k$ and $b = 2i - j + 3k$ find

(a) $a \times b$ and

(b) $|a \times b|$

29. Prove that a connected graph G is an euler graph if and only if all vertices of G are of even degree.
30. Find $8^{35} \pmod{20}$.
31. Find all integers x such that $x^{86} \equiv 6 \pmod{29}$

(6 × 4 = 24 Marks)

PART – D

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

32. (a) Find the eigen values and eigen vectors of the matrix A .

$$A = \begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix}$$

- (b) For vector $P = 4i - j + 2k$ and $q = -2i + 3j - 2k$ determine

(i) $p \cdot q$ and

(ii) $p \times q$.

33. (a) If n is a positive integer, then prove that $\frac{d}{dx}(x^n) = n x^{n-1}$.

(b) Find $f''(\pi/4)$, if $f(x) = \sec x$.

34. (a) Find the slope of the curve $y^2 = 1 - x$ at the point $(2, 1)$.

(b) Find $\frac{d}{dx}[(1 + x^5 \cot x)^8]$.

35. (a) Using Euclid's Algorithm. find the gcd of 135 and 156.

(b) Solve $1 \equiv 365x + 1876y$.

(2 × 15 = 30 Marks)

(Pages : 3)

S – 3053

Reg. No. :

Name :

Fifth Semester B.Sc./B.C.A. Degree Examination, January 2024

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. Define volt.
2. Ripple factor can be notated using r . True / False
3. NPN is the short name of _____
4. _____ is the base of octal number system.
5. Expand BCD.
6. Hamming code is a _____
7. Draw the truth table of AND gate.
8. Expand SOP.
9. Data Selector is another name of _____
10. Serial in Parallel out Shift Register is used for data buffering. True/False.
(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

(Short Answer)

(Not to exceed one paragraph. Answer any **eight** questions. Each question carries 2 marks)

11. Define PN Junction diode.
12. What do you mean by ripple factor?
13. Write the role of transistor.
14. Find 1^s complement of 101010101100.
15. Define self-complementing property.
16. Draw the diagram and truth table of XOR gate.
17. Prove the Boolean expression $1 + A = 1$
18. Write the advantage of D flip flop.
19. Write the role of encoder.
20. Write a note on de-multiplexer.
21. What do you mean by shift register?
22. Write in detail about half wave and full wave rectifiers.

(8 × 2 = 16 Marks)

SECTION – C

(Short Essay)

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

23. Explain in detail about diode clippers and its types.
24. What is Brakhhausen criteria? Explain.

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25. Convert :
- (a) $(124)_{10}$ to octal
 - (b) $5AF.D_{16}$ to Binary
 - (c) $(14.25)_{10}$ to Binary
 - (d) 3542_8 to Hexa Decimal
26. Write a note on gray code.
27. Write the role of parity bit in error detection.
28. Explain in detail about NOR gate.
29. State and prove Demorgans theorem.
30. Draw the circuit of full adder.
31. Explain serial in parallel out shift register.

(6 × 4 = 24 Marks)

SECTION – D

(Long Essay)

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

- 32. Describe various types of transistors in detail.
- 33. Explain subtraction using 1^s and 2^s complement with example.
- 34. Write a detailed note on JK flip flop.
- 35. Explain in detail about various 4 bit counters.

(2 × 15 = 30 Marks)

(Pages : 3)

S – 3042

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, January 2024

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)

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

1. ALU stands for _____.
2. Define System BUS.
3. What do you mean by hit ratio?
4. _____ is the symbol used to notate calculation in flowchart.
5. Operator is a symbol. True/False
6. Define constant.
7. Define array.
8. & operator is used for _____.
9. strcat() function is used for.
10. All character arrays are strings in C. True/False.

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B (Short Answer)

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

11. Write a note on Registers.
12. Discuss the role of SMPS.
13. Define port.
14. Define the term Algorithm.
15. What do you mean by object code?
16. Write a note on conditional operator.
17. Write the syntax of if statement.
18. Discuss about user defined functions.
19. What do you mean by storage class?
20. Write the advantage of structure.
21. Elaborate the term text file.
22. Write the role of BIOS and CMOS.

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

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

23. Describe expansion cards in detail.
24. Explain in detail about CPU registers.
25. Draw the flow chart for finding area of triangle.

26. Discuss the structure of C program.
27. List and explain simple I/O statements in C.
28. Write the syntax of switch-case.
29. Explain call by reference with suitable example.
30. Discuss the relation between array and pointer.
31. Describe various modes of file.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

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

32. Write a detailed note on cache memory and virtual memory.
33. Discuss the data types in C.
34. Elaborate multi-dimensional arrays with suitable example.
35. List and explain functions for file handling.

(2 × 15 = 30 Marks)