Reg. No. ☐☐☐☐☐☐☐☐

I Semester B.Sc./B.C.A/B.Sc.(FAD)/B.VA., Degree Examination,
May/June - 2022
GENERIC ENGLISH
Language English -I (LINGUA FRANCA-I)
(NEP CBCS Semester Scheme)

Time : 2½ Hours   Maximum Marks : 60

Instructions: 1) *Read all the instructions carefully and answer the questions.*
   2) *Write the question number correctly.*

SECTION - A

(Workbook)

I. Read the following passage and answer the questions set on it: (5×1=5)

The HCQ (Hydroxychloroquine story begins in 1638 when the wife of the Viceroy of Peru, Countess Cinchona, acquired malaria while living in the New World. Rather than getting the "approved" therapy - blood-letting, she was treated by an Incanherbalist with the bark of a tree (eventually, named the countess-Cinchona Tree). Her response was dramatic; when the Viceroy returned to Spain, he brought with him large supplies of the powder for general use, which at the time was controlled by the Church and was thus called "Jesuit's Powder".It took nearly two centuries for the active substance, Quinine, to be isolated from the bark (and was eventually made a name for itself as a tonic to be added to gin). Over the next century, quinine would become a common component in flock medicines and patent remedies for the treatment of malaria in the southern states of America, as well as for generic malaise. By the 1940s, quinine, or, rather its derivative chloroquine, was recognized for its anti-malarial properties and found use among troops fighting in the Pacific during World War-II. However, it was noted that this compound had significant toxicities. In 1945, a modification of this compound via hydroxylation led to the development of HCQ, which was found to be less toxic and remains in use, without change, to this day. Hydroxychloroquine treats rheumatic disorders such as systemic lupus erythematosus, rheumatoid arthritis, and porphyria cutaneatarda, and certain infections such as Q fever and certain types of malaria. It is considered the first-line treatment for systemic lupuserythematosus. Certain types of malaria, resistant strains, and complicated cases require different or additional medication. The medicine is widely used to treat primary Sjögren syndrome but does not appear to be effective. Hydroxychloroquine is widely used in the treatment of post-Lymearthritis.

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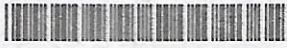
It may have both an anti-spirochete activity and an anti-inflammatory activity, similar to the treatment of rheumatoid arthritis.

1. Who treated Countess Cinchona?

2. How was the response of Countess Cinchona to the treatment?

3. Name the common/component/ in flok medicines and patent remedies for the treatment of malaria.

4. _____ is used in the treatment of post-Lymearthritis.

5. What led to the development of Hydroxychloroquine?

II. **Study the following graph on the use of electrical gadgets and interpret it. (1×5=5)**

Electrical Gadgets Usage
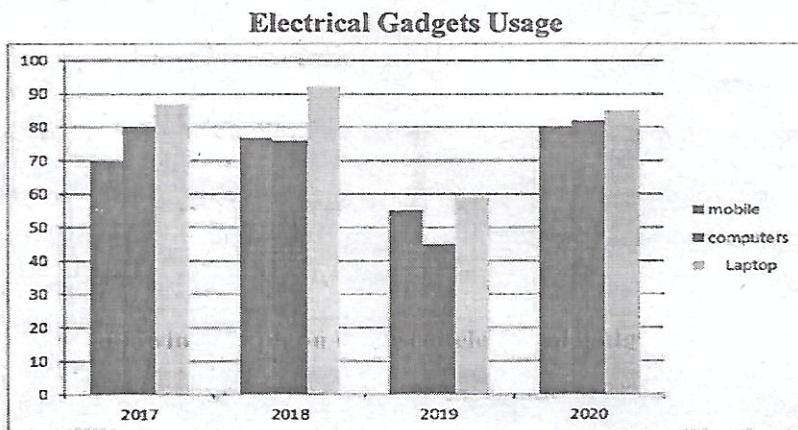
III. **Answer the following question.**   (1×5=5)

1. Describe the types of listening in a paragraph.

(OR)

2. Explain the differences between hearing and listening.

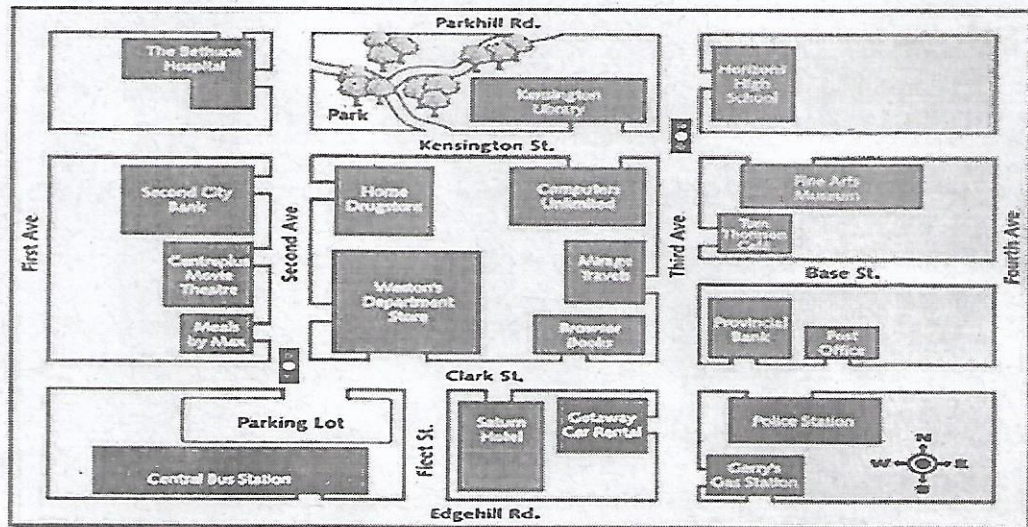IV. **Do as directed**   (5×2=10)

1. Introduce yourself to your Principal as a parent.

2. Request your class teacher to consider one of your friends as a volunteer for the NSS Special Camp.

3. Express your words of congratulations to your teacher on the awardof Ph.D.

4. Enquire at the stationery shop for practical Record books.

5. Seek permission from your mother to participate in the trekking camp.

V. 1. Give instructions to your sister on how to get a Toll pass. (1×3=3)

2. Give directions to your brother to go to 'Heritage High School' from Central Bus Station'. (1×2=2)

VI. Do as directed:

1. **Frame questions as directed** (3×1=3)

   a) The medicine is widely used to treat primary <u>measles.</u> (into Wh/h questions)

   b) The Viceroy returned to Spain. (into Yes/NO Question)

   c) I went to <u>college</u> yesterday. (into Wh?h Questions)

2. **Add suitable question tage to the following sentences.** (2×1=2)

   a) Lab examinations are advanced by a week. _____.

   b) Renuka did not have a project to work on interdisciplinary studies _____.

3. **Fill in the blanks with suitable options given in the brackets.** (3×1=3)

   a) An abacus _____ (is/were) an ancient device that is used for arithmetic calculations.

   b) "Fire inch-sticks" _____ (is/are) found in all parts of China.

   c) Furniture _____ (has/is) made of wood.

4. Use the correct form of the word given in brackets and fill the blanks. (2×1=2)

    a) Money gives us a sense of <u>security</u> . But _____ it is a tough task (into a verb).

    b) Her voice is <u>melodious.</u> Her ____ impressed the audience (into a noun.)

SECTION - B
(COURSE BOOK)

VII Answer any FIVE of the following in a word or a phrase or a sentence: (5×1=5)

1. What does the poet tire of hearing in the poem 'Democracy'?

2. In 'Farewell Address at Chicago', Obama says _____ remains a potent and often divisive force in our society.

3. What did the report say about the Unknown Citizen?

4. Ramesha is _____ in 'The Golden Dream'.

5. What defect has the General in the powerful tank?

6. Name the defect in the bomber in the poem 'From a German War Primer'

7. What is Free Speech according to Sarukkai?

VIII Answer any ONE of the following in about a page: (1×5=5)

1. In the poem 'Democracy', the poet calls for a change. What is the change he wants to bring and how?

2. 'Freedom does not come with compromise and fear', Substantiate it.

3. How does society evaluate modern man in the poem 'The Unknown Citizen'?

IX Answer any ONE of the following in about two pages: (1×10=10)

1. Comment on Obama's speech.

2. Explain the theme in 'Democracy'.

3. Discuss the significance of 'Hatthur and its bus stop'.

_____

I Semester B.C.A./B.H.M. & Other Course Degree Examination, May/June - 2022
LANGUAGE SANSKRIT
Sankshepa Ramayana (Balakanda) of Valmiki 1st Sarga Grammar &
Comprehension
(CBCS Scheme NEP Freshers 2021-22 and Onwards)
Paper - I

Time : 2½ Hours   Maximum Marks : 60

Instructions to Candidates:- 1)   Answer in Sanskrit/ Kannada/ English.
2)   Question No. I, V, and VI should be answered in Sanskrit only.

I.   समीचीनम् उत्तरं चिनुत ।   (10×1=10)

ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಆರಿಸಿ ಬರೆಯಿರಿ.

Select and write the correct answer.

1)   वाल्मीकिः कं परिप्रपच्छ?

अ) नारदं   आ) अगत्यम्   इ) वसिष्ठं   ई) विष्णुं

2)   गाम्भीर्ये श्रीरामः कः इव अस्ति?

अ) भूमिरिव   आ) समुद्रइव   इ) आकाशइव   ई) वायुरिव

3)   सर्वगुणसम्पन्न: कः?

अ) श्रीरामः   आ) मारीचः   इ) वानरः   ई) नरः

4)   लङ्काया: अधिपति: कः?

अ) रामः   आ) रावणः   इ) सुग्रीवः   ई) मारीचः

5)   भरतस्य माता का?

अ) कौसल्या   आ) सुमित्रा   इ) कैकेयी   ई) वैदेही

6)   रावण: काम् अपजहार:?

अ) लक्ष्मीं   आ) सीतां   इ) रमाम्   ई) वीणां

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7) त्रिलोकज्ञ: क:?

   अ) नारद: आ) वसिष्ठ: इ) काश्यप: ई) गौतम:

8) जनकस्य सुता का?

   अ) लक्ष्मी   आ) दुर्गा   इ) जानकी   ई) ज्योत्स्ना

9) आदिकवि: क:?

   अ) व्यास: आ) भास   इ) वाल्मीकि   ई) कालिदास:

10) शूर्पणखा केन विरूपिता?

    अ) रामेन   आ) लक्ष्मणेन   इ) भरतेन   ई) शत्रुघ्नेन

II. द्वयो: प्रबन्धरूपेण उत्तरं लिखत।   (2×8=16)

   ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳನ್ನು ಕುರಿತು ಪ್ರಬಂಧಾತ್ಮಕವಾದ ಉತ್ತರವನ್ನು ಬರೆಯಿರಿ.

   Write an essay on any two of the following :

   1) रामायणस्य कर्तु: विषये प्रबन्धं लिखत।

      ರಾಮಾಯಣದ ಕರ್ತೃವನ್ನು ಕುರಿತು ಪ್ರಬಂಧ ಬರೆಯಿರಿ.

      Write about the Author of Ramayana.

   2) अरण्यकाण्डस्य कथां निरूपयत।

      ಅರಣ್ಯಕಾಂಡದ ಕಥೆಯನ್ನು ವಿವರಿಸಿ.

      Narrate the story of Aranya Kandam.

   3) वाल्मीके: रामायणे प्रस्तुत: रामस्य वनगमन वृत्तान्त:।

      ವಾಲ್ಮೀಕಿ ರಾಮಾಯಣದಲ್ಲಿ ತಿಳಿಸಿರುವಂತೆ ರಾಮನು ವನವಾಸಕ್ಕೆ ತೆರಳುವುದು.

      Rama's departure to the forest as depicted in Ramayana of Valmiki.

III. त्रयाणां श्लोकानां अनुवादं कृत्वा विवृणुत।   (3×3=9)

   ಯಾವುದಾದರೂ ಮೂರು ಶ್ಲೋಕಗಳನ್ನು ಅನುವಾದಿಸಿ ವಿವರಿಸಿ.

   Translate and explain any Three shlokas.

   1) कोऽन्वस्मिन् साम्प्रतं लोके गुणवान् कश्य वीर्यवान्।

      धर्मज्ञश्य कश्य श्य सत्यववाक्यो दृढव्रत:॥

   2) रक्षिता स्वस्य धर्मस्य स्वजस्य च रक्षिता।

      वेदवेदाङ्गतत्वज्ञो धनुर्वेदेच निष्ठित:॥

3) स जगाम वनं वीर: प्रतिज्ञामनुपालयन्।

पितुर्वचननिर्देशात् कैकय्या: प्रियकारणात्॥

4) नियुज्यमानो राज्याय नैच्छद् राज्यं महाबल:।

स जगाम वनं वीरो रामपादप्रसादक:॥

5) रक्षसां निहतान्यासन् सहस्राणि चतुर्दश।

ततो ज्ञातिवधं श्रुत्वा रावण: क्रोधमूर्च्छित:॥

IV. वाक्यद्वयं सन्दर्भे विवृणुत। (2×3=6)

ಯಾವುದಾದರೂ ಎರಡು ವಾಕ್ಯಗಳನ್ನು ಸಂದರ್ಭ ಸಹಿತ ವಿವರಿಸಿ.

Annotate any Two of the following.

1) रक्षिता जीवलोकस्य धर्मस्य परिरक्षिता।

2) सर्वशास्त्रार्थ तत्वज्ञ: स्मृतिमान्–प्रतिभानवान्।

3) विराधराक्षसं हत्वा शरभङ्गं ददर्श ह।

4) गते तु भरते श्रीमान् सत्यसन्धो जितेन्द्रिय:।

V. संस्कृत भाषया उत्तरं लिखत।

ಸಂಸ್ಕೃತ ಭಾಷೆಯಲ್ಲಿ ಉತ್ತರಿಸಿ.

Answer in Sanskrit

अ) लिङ्ग विभक्तिवचनानि लिखत। (पञ्चानामेव) (5×1=5)

1) रामं। 2) दशरथेन।

3) सीतां। 4) वचनात्।

5) केन। 6) तेषां।

7) त्वं। 8) हे नरेन्द्र।

आ) लकार–पुरुष–वचनानि लिखत। (चतुर्णामेव) (4×1=4)

1) भवतु। 2) वक्ष्यामि।

3) पप्रच्छ। 4) अब्रवीत्।

5) जगाम। 6) पिनाम

7) क्रीडिष्याम: 8) वद

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VI. परिच्छेदमिमं पठित्वा प्रश्नानुत्तरत (5×2=10)

एकस्मिन् दिवसे गौतम: एकेन साधुना सह मृत्युं, व्याधिं, दु:खंचोदिश्य प्रदीर्घां चर्चाम् अकरोत्। कथं जना: संसारं दु:खेभ्यो मुक्ता भवेयुरिति स: साधुम् अपृच्छत्। साधु: शान्तचित्तेन प्रव्यवदत्। अपि दु:खपूर्ण: खल्वेष: संसार:। संसारत्यागेन विना सत्यसुखं मानवो नाधिगच्छन्ति। रात्रौ नगर्यां शान्तता प्रसूता। नगरस्य जना: निद्रिता: आसन्। गौतम: सत्य सुखन्वेषणाय राजमन्दिरात्रिर्गत: अन्ते उष: वेलायां पिप्पल वृक्षस्य अध: ध्यानमार्गम् आचरत्। तस्य तत्रैव चित्रप्रकाशनस्य लाभोऽभवत्। स: बुद्धोऽबवत्।

प्रश्ना:।

1) मार्गेगौतम: किं किं अपश्यत्?

2) कथं मानवा: सत्यसुखं अधिगच्छन्ति?

3) रात्रौ नगर्यां किं प्रसूता?

4) कुत्र गौतम: ध्यानमार्गमाचरत्?

5) गौतम: किम् अभवत्?

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Reg. No.

I Semester B.C.A./B.Voc. IT Degree Examination, May/June - 2022

ಕನ್ನಡ ಭಾಷೆ

ಗಣಕ ಸೌರಭ – 1

(NEP Scheme Freshers)

Paper : 1

Time : 2½ Hours   Maximum Marks : 60

I.   ಈ ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಐದು ಪ್ರಶ್ನೆಗಳಿಗೆ ನಾಲ್ಕು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ.   (5×2=10)

   1)   ಹೂ ಗಿಡ ಮರಗಳ ಬಗ್ಗೆ ಆಂಡಯ್ಯ ಕವಿಯ ನಿಲುವೇನು ?

   2)   ಸಾಕಾರ ಸಂಸ್ಕೃತಿ ಎಂದರೇನು ?

   3)   ದೇವತೆಗಳು ಭಾಷೆಯನ್ನು ಹೇಗೆ ಬಳಸಿದರು ?

   4)   ಚಂದ್ರನನ್ನು ಭೂಮಿಗೆ ಯಾರು ಕರೆದಿದ್ದರು ?

   5)   ಮಾರೆಯೊಂದಿಗೆ ಮೂಗಿ ಹೇಗೆ ಪ್ರತಿಕ್ರಿಯಿಸುತ್ತಿದ್ದಳು ?

   6)   ನಕ್ಷತ್ರಗಳಿಗೆ ಹೆಸರುಗಳನ್ನು ಹೇಗೆ ಇಟ್ಟಿದ್ದಾರೆ ?

   7)   ಸಾಕು ಮೊಲದ ತಳಿಗಳು ಯಾವುವು ?

   8)   ಸರ್ವೋತ್ಕೃಷ್ಟ ಆಯುಧ ಯಾವುದು ?

II. ಈ ಕೆಳಗಿನ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳಿಗೆ ಹತ್ತು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ.   (4×5=20)

   1)   ಸಂಸ್ಕೃತಿಯ ಪ್ರಸಾರ ಯಾವ ರೀತಿಯದು ?

   2)   "ಚಂದ್ರನನ್ನು ಕರೆಯಿರಿ ಭೂಮಿಗೆ" ಕವಿತೆಯ ಆಶಯವೇನು ?

   3)   ತಮ್ಮಯ್ಯ ಮಾರೆಯನ್ನು ಹುಡುಕುವ ಪ್ರಯತ್ನಗಳು ಎಂಥದ್ದು ?

   4)   ಮುಪ್ಪು ಯೌವನ ಕವಿತೆಯ ಬಗ್ಗೆ ತಿಳಿಸಿ.

   5)   ದೇವಾಲಯಕ್ಕೆ ಹೋಗುವುದರ ಬಗ್ಗೆ ಕುವೆಂಪುರವರ ನಿಲುವುಗಳೇನು ?

   6)   ಓಹಾರ್ನರ ತಾಯಿ ತಂದೆ ಭೇಟಿಯಾದ ಸಂದರ್ಭ ತಿಳಿಸಿ.

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III. ಈ ಕೆಳಗಿನ ಯಾವುದಾದರೂ **ಎರಡು** ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು ಪುಟಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ.

   1) ಕನ್ನಡದ ಅಭಿವೃದ್ಧಿ ಗೊರೂರರ ದೃಷ್ಟಿಯಲ್ಲಿ ಯಾವ ರೀತಿಯದಾಗಿದೆ ? ವಿವರಿಸಿ.

   2) 'ಬೆಳದಿಂಗಳು' ಕುರಿತು ವಿ.ಸೀ. ಅವರ ನಿಲುವುಗಳೇನು ? ವಿವರಿಸಿ.

   3) 'ದಾಂಪತ್ಯ' ಕವಿತೆಯ ಆಶಯಗಳೇನು ?

   4) ಮೌಸ್ ಬಿಟ್ಟು ಮೊಲ ಹಿಡಿದಾತ ಯಾರು ? ವಿವರವಾಗಿ ತಿಳಿಸಿ.

IV. ಈ ಕೆಳಗಿನ ಯಾವುದಾದರೂ **ಎರಡು** ಪ್ರಶ್ನೆಗಳಿಗೆ ಹತ್ತು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. (ಓದು ಪಠ್ಯ) (2×5=10)

   1) ದ್ವಿಭಾಷಿಕತೆ, ಬಹುಭಾಷಿಕತೆಗಳ ಬಗ್ಗೆ ವಿವರಿಸಿ.

   2) ಉಲ್ಕಾವೃಷ್ಟಿಯ ಬಗ್ಗೆ ಲೇಖಕರು ತಿಳಿಸಿರುವ ವಿಚಾರಗಳೇನು ?

   3) 1986 ರಲ್ಲಿ ನಡೆದ ಸಂಗತಿ ಯಾವುದು ? ಅದರ ಪರಿಣಾಮವೇನು ?

   4) ಕ್ಷಿಪಣಿಗಳ ಬಗ್ಗೆ ಪರಿಚಯಿಸಿ.

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SEDF101

Reg. No.

I Semester B.C.A. (Odd) Degree Examination, May/June - 2022
COMPUTER SCIENCE
Digital Fluency
(NEP Scheme)

Time : 1½ Hours   Maximum Marks : 30

Instructions to Candidates:

Answer all Parts.

PART - A

Answer any **Five** questions. Each question carries **2** marks.   (5×2=10)

1. Define operating system. Give any two examples.

2. Name different office automation tools.

3. What is the purpose of spread sheet?

4. Define the terms.

   a) Gateway.

   b) IOT.

5. What is malware? Mention any two malwares.

6. What is an antivirus?

7. Define the terms :

   a) Database.

   b) DBMS.

8. What is meant by digital foot print?

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PART - B

Answer any **Four** questions. Each question carries **5** marks.　　(4×5=20)

9. Explain different office automation tools.

10. a) Differentiate between HTTP and HTTPs. (2)

    b) Write a note on types of networks. (3)

11. Write a note on hackers and crackers.

12. Write a note on any two types of networking devices.

    a) MODEM.

    b) Ethernet card.

    c) Hub.

13. Discuss various E-learning platforms.

14. Mention the steps to create google questionnaires.

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I Semester B.C.A. Degree Examination, May/June - 2022

COMPUTER SCIENCE

Data Structure

(NEP Scheme 2021)

Paper : CA-C3T

Time : 2½ Hours   Maximum Marks : 60

Instructions to Candidates : Answer all Sections.

SECTION - A

I. Answer any Four questions. Each question carries Two marks.   (4×2=8)

1) Define Abstract Data Type.

2) What is sparse matrix?

3) Define Linked list.

4) Define

   a) Directed graph

   b) Weighted graph.

5) Define Binary Search.

6) Define Hashing.

SECTION - B

II Answer any Four questions. Each question carries Five marks.   (4×5=20)

7) Explain traversal of singly linked list

8) Explain circular queue with example.

9) Write an algorithm for inserting values in circular queue.

10) Define Binary search Tree. Give example.

11) Explain Linear Search algorithm

12) Explain Topological sorting.

[P.T.O.

SECTION - C

III. Answer any Four questions. Each question carries Eight marks   **(4×8=32)**

13) a)   Explain the different types of data Structures.   **(4)**

    b)   Write a note on Asymptotic notations.   **(4)**

14) a)   Evaluate Postfix expression. Show step clearly 6, 5, 3, +, * , 12, 3, /, -   **(4)**

    b)   Write algorithms for

        i)   Push

        ii)   Pop operations for stack   **(4)**

15) What is Recursion ? Write an algorithm for tower of Hanoi Problem.   **(8)**

16) Write short notes on :   **(8)**

    a)   Lexicographic Search Trees

    b)   B - Trees.

17) a)   Define Sorting   **(2)**

    b)   Write a C Program to sort an array using insertion sort technique.   **(6)**

18) Explain hashing techniques and techniques for collision resolution.   **(8)**

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I Semester B.C.A. Degree Examination, May/June- 2022

COMPUTER SCIENCE

Problem Solving Techniques

(NEP Scheme)

Paper : CA-C2T

Time : 2½ Hours   Maximum Marks : 60

Instructions to Candidates : 1.   Answer any **Four** questions from each part,
2.   Answer All Parts

PART - A

I.   **Answer any Four questions, each carries Two marks.**   (4×2=8)

1)   What is an Algorithm ? Give one of its advantage.

2)   Define Asymptotic notation List any two.

3)   Write the basic structure of C program.

4)   What is on array? Write the statements to print the elements of an array.

5)   What is hash search ?

6)   Mention any two differences between linear search and binary search.

PART - B

II.   **Answer any Four questions each carries Five marks.**   (4×5=20)

7)   Differentiate between while and do-while loop. Illustrate with example.

8)   Write a program to find whether a given number is prime number or not.

9)   Example bitwise operators in C with suitable examples.

10)   Write a C program to compute GCD of two integers. Use a function to compute GCD

11)   Write an algorithm for selection sort. Illustrate with an example.

12)   Explain two way merge with example.

[P.T.O.

PART - C

III. Answer any Four questions each carries Eight marks   (4×8=32)

13) Explain the different data types supported by C language Mention their range and size.

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I Semester B.C.A. Degree Examination, May/June - 2022
COMPUTER SCIENCE (Open Elective)
Journey into Fundamentals and C Programming Concepts
(NEP Scheme - 2021 Onwards)

Time : 2½ Hours　　　　　　　　　　　　　　　　Maximum Marks : 60

Instructions to Candidates:

Answer any **four** questions from each part.

PART - A

Answer any **Four** questions. Each question carries **2** marks.　　　(4×2=8)

1. What is meant by Hardware and software?

2. Define the terms computer virus and antivirus.

3. What is binary number system?

4. Convert $(45)_{10} = (\quad)_2$?

5. List the different types of operators in C.

6. List two differences between variable and constant.

PART - B

Answer any **Four** questions. Each question carries **5** marks.　　　(4×5=20)

7. Bring out the differences Assembler, interpreter and compiler.　　　(5)

8. a. Define Algoritham and flowchart.　　　(2)

　　b. Draw the different symbols of flowchart.　　　(3)

9. What is meant by number system and explain different types of number systems.　　(5)

10. What are the steps involved to add/remove a file/folder using control panel.　　(5)

11. Write a short note on C-tokens.　　　(5)

12. Define if statement and explain the various forms of if statement with syntax and example.

　　　(5)

[P.T.O.

PART - C

Answer any **Four** questions. Each question carries **8** marks.   (4×8=32)

13. Explain about various, categories of computer languages with examples.   (8)

14. Convert the following :

    a. $(10110110)_2 = ( )_8$ and $( )_{16}$ (4)

    b. $(7A)_{16} = ( )_2$ and $( )_8$ (4)

15. Define operating system and explain the features of operating system.   (8)

16. Explain the applications of windows in detail.   (8)

17. Explain the different data types available in C.   (8)

18. What is meant by loop and explain the different looping statements available in C-programing.   (8)

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I Semester B.Sc. Degree Examination, May/June - 2022

CORPORATE MATHEMATICS

(NEP Scheme 2021-2022 and Onwards) (Open Elective)

Paper : I

Time : 2½ Hours   **Maximum Marks : 60**

Instructions to Candidates:

    Answer **All** the questions.

I.   Answer any **Six**.   (6×2=12)

1.   Solve for $x : \dfrac{x}{2} + \dfrac{2x}{3} = \dfrac{7}{2}$.

2.   Sum of two consecutive integers is 39. Find the numbers.

3.   Factorize : $x^2 - 3x - 4 = 0$.

4.   Solve : $x - y = 2$, $2x + y = 4$ by substitution method.

5.   Explain with example cumulative frequency.

6.   Define Arithmetic mean of a set of observations and mention two of its merits.

7.   Find the median for the following data 5, 9, 8, 6, 1, 4, 10, 8.

8.   If mean and coefficient of variation of a distribution are 56 and 75% respectively. Find the standard deviation.

9.   What is Histogram? Mention its significance.

10.   Define linear programming problem.

[P.T.O.

II. **Answer any Three.** (3×4=12)

11. Solve for $x: \dfrac{x+3}{x+7} = \dfrac{x-4}{x-2}$.

12. Solve for x and y by Rule of cross Multiplication (RCM) :

    $5x + 2y = 8$
    $9x - 5y = 23$

13. Solve for x using Sridharacharya method $8x^2 - 22x - 21 = 0$.

14. Following are the marks obtained by the students in a certain test. Prepare a frequency distribution with an interval 10 marks each as [10-19], [20-29], ..., [60-69].

    37, 49, 54, 51, 37, 15, 12, 33, 23, 25

    18, 35, 33, 42, 45, 55, 69, 63, 46, 29

    18, 37, 46, 59, 29, 35, 27, 45, 47, 65.

15. A company produces two articles A and B. There are two departments through which it passes, the maximum potential capacity of the assembly is 60 hours and finishing department is 48 hours. Production of one unit of A requires 4 hours assembly and 2 hours in finishing. Each unit of B requires 2 hours of assembly and 4 hours in finishing. If the profit is Rs. 80 for A and Rs. 60 For B, formulate LPP to maximize the profit.

16. Draw a multiple bar diagram for the following data

Religion	Population	(millions)
	1971	1981
Hindu	82.7	82.6
Muslim	11.2	11.4
Christian	2.6	2.4
Others	3.5	3.6

III. Answer any Six. (6×6=36)

17. A boatsman goes 96 kms in 8 hours with the flow of a river and return in 12 hours against the flow. Find the speed of the boat and the river.

18. Solve the resulting quadratic equation using formula, $\dfrac{x+8}{3x-5} = \dfrac{x-8}{x+5}$.

19. A train travels a distance of 300 kms, at a constant speed. If the speed of the train is increased by 5 km/hr, the journey would have taken 2 hours less. Find the speed of the train.

20. A board of 65 inches long is cut into two pieces. The smaller piece in 1 inch longer than one - third the length of the larger piece. Find the length of the two pieces.

21. Solve the following LPP by graphical method

    Maximize : $z = 3x + 4y$,

    Subject to the constraints, $x + 2y \le 10$, $x + y \le 6$, $x \ge 0, y \ge 0$.

22. Solve the following LPP by the graphical method.

    Minimize : $z = 3000x + 2000y$

    Subject to the constrains,

    $12x + 4y \ge 48$

    $4x + 4y \ge 32$

    $8x + 16y \ge 80$

    $x \ge 0, y \ge 0$.

23. Draw a pie chart for the following data

Item of Expenditure	Amount spent (in Rs.)
Food	3750
Health	1875
Clothing	1875
Education	1200

24. Calculate the mode for the following frequency distribution table.

Income(Rs.)	1000-2000	2000-3000	3000-4000	4000-5000	5000-6000	6000-7000
No. of Workers	15	18	30	17	18	22

25. Calculate coefficient of Mean deviation (MD) from median for the following frequency distribution table.

x	5	6	7	8	9	10
f	8	12	18	8	2	1

26. Goals scored by two teams A and B in football season are as follows,

No. of goals	No. of Matches	
	Team A	Team B
0	22	11
1	8	10
2	7	8
3	8	7
4	3	4