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RAN-2411001102010001

B. Sc. (I. T.) (Sem. - II) Examination April - 2025

Fundamentals of Programming Using C-II (Paper - 203)

Time: 2 Hours]

[Total Marks: 50

સૂચન : / Instructions

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

B. Sc. (I. T.) (Sem. - II)

Name of the Subject :

Fundamentals of Programming Using C-II (Paper - 203)

Subject Code No.: **2411001102010001**

Seat No.:

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Student's Signature

Q. 1. Do as directed: (Any Ten)

10

- Write a syntax to create a generic pointer in C.
- _____ function is used to convert value "85" string to integer.
- What is meaning of fseek (fp, 5, 0) ?
 - moves 5 bytes in forward direction from beginning
 - moves 5 bytes in forward direction from current position
 - moves 5 bytes in backward direction from current position
 - moves 5 bytes in backward direction from end of file
- What will be output of the following program?

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
int arr[] = {25,40,65,30,67};
```

```
int *ptr = arr;
```

```
printf("%d %d", *(ptr+2), *(ptr+4));
```

```
return 0;
```

```
}
```

- _____ is a return type of function calloc?

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[1]

[P.T.O.]

P0192

6. Write a syntax to declare a pointer to function that takes one integer argument and returns integer
7. _____ function is used to write integer to a file.
8. Local variables are stored in an area called _____
 - A. Heap
 - B. Permanent storage area
 - C. Free memory
 - D. Stack
9. What does argc and argv refers in main function?
10. What is the use of register keyword in C?
11. What does the following declaration mean?


```
int(*ptr)[10];
```
12. What will be equivalent pointer expression for referring the element a[i][j] in C?

Q. 2. A. Answer following questions(Any Two) 10

1. What is recursion? Explain it with appropriate example, advantages and limitations.
2. What is structure? How to pass the structure as an argument in function? Explain with appropriate example
3. What is dynamic memory allocation? How is it different than static memory allocation? Explain different function used to implement it.

Q. 2. B. Answer following questions(Any One) 04

1. Write a note on macro in C.
2. Write a note on generic pointer in C.

Q. 3. A. Answer following questions(Any Two) 10

1. What is file in C? List out different file opening mode in C. Explain any 2 functions used to read and write data in file.
2. Differentiate between call by value and call by reference with example.
3. Compare auto, static, external and register variable in C.

Q. 3. B. Answer following questions(Any One) 04

1. Explain conditional compilation in C with appropriate example.
2. Write a note on array of structure with example.

Q. 4 Answer following question (Any Three)

12

1. Develop a user defined function to sort an array of integers using pointer.
 2. Design a program to calculate factorial of a given number using command line argument.
 3. Develop a user-defined function to concatenate two string using pointers
 4. Write a C program to count number of digits in a file “student.txt”.
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B.Sc. (IT) NEP (Sem. II) Examination April - 2025

Introduction to DBMS - Minor (Paper : 204)

Time: 2 Hours]

[Total Marks: 50

સૂચન : / Instructions

(૧)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

B.Sc. (IT) NEP (Sem. II)

Name of the Subject :

Introduction to DBMS - Minor (Paper : 204)

Subject Code No.: **2411001102030001**

Seat No.:

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Student's Signature

Q-1 Answer in brief (Any Ten)

10

1. What is a check constraint?
2. What is Big Data?
3. List out types of attributes.
4. What is cardinality ratio?
5. Explain schema and instance.
6. Define: data models
7. What is difference between DROP and DELETE command?
8. What is Count() function?
9. What is ACID property of a transaction?
10. What is a use of TRIM() string function?
11. What is an entity and entity set?

Q-2. [A] Answer following question in detail. (Any Two)

10

- 1) Draw an E-R diagram for online ticket reservation system.
- 2) Write a short note on: DBMS architecture
- 3) Explain disadvantages of Traditional File system over DBMS.

Q-2. [B] What is Datatype? Explain datatypes of MySql with appropriate example

04

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[1]

[P.T.O.]

P0459

Q-3. [A] Answer following question. (Any Two) 10

- 1) What do you mean by Attribute? Explain types of attribute in detail.
- 2) List out types of databases. Explain NoSQL and XML database in detail.
- 3) Explain numerical functions of MySQL with example.

Q-3. [B] Discuss about database languages. 04

Q-4 Answer the following question (Any Three) 12

1. Explain Difference between ALTER and UPDATE command with example.
2. Explain relational model.
3. Explain primary key and foreign key constraint.
4. Consider table Book_master(book_id, author_name, no_of_pages, price)
 1. Write a query to print author whose name starts with 'B'.
 2. Display book detail which has more than 150 pages.



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B. Sc. (I. T.) (M. Sc. I. T.) (Sem. - II) Examination April - 2025

MDC - 202 : Mathematics - II

Time: 2 Hours]

[Total Marks: 50

સૂચના : / Instructions

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

B. Sc. (I. T.) (M. Sc. I. T.) (Sem. - II)

Name of the Subject :

MDC - 202 : Mathematics - II

Subject Code No.: **2411001102040001**

Seat No.:

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Student's Signature

- (2) Attempt all questions.
- (3) Figures to the right indicate marks of the questions.
- (4) Follow usual notations.

Q. 1. a. Define adjacent edges and incident with illustration

04

OR

a. Discuss Seating Problem.

b. Attempt any TWO.

06

1. Define null graph, isolated and pendent vertex in graph.

2. Prove that an infinite graph with finite number of edges must have infinite no. of isolated vertices.

3. Show that in a simple graph with n vertices the maximum degree of any vertex is $n-1$ and the maximum number of edges is $n(n-1)/2$.

Q. 2. a. Write a note on Isomorphic graph.

04

OR

a. Define path and cycle

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[1]

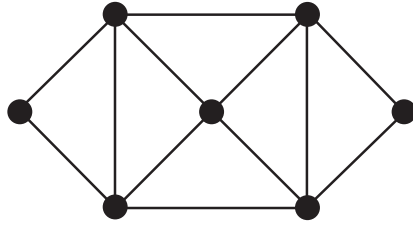
[P.T.O.]

P0458

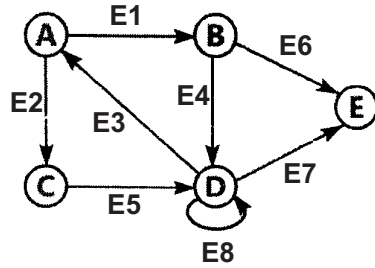
- b. Attempt any TWO.** **06**
1. Define connected graph and prove that its vertex set V can be partitioned into two non-empty, disjoint subset V_1 and V_2 such that there exist no edge in G whose one end vertex is in subset V_1 and other is in subset V_2 then graph is disconnected.
 2. Prove that if a graph has exactly two vertices of odd degree there must be a path joining these two vertices.
 3. Show that a connected graph G is an Euler graph if and only if it can be decompose into circuits.
- Q. 3. a.** Defining sum of two graphs with two illustration **04**
- OR**
- a.** Define Hamiltonian paths and circuits.
- b. Attempt any TWO.** **06**
1. Prove that there is exactly one path between every pair of vertices in G .
 2. Prove that Every tree has either one or two centers.
 3. Prove that the vertex connectivity of a graph G cannot exceed the edge connectivity of G .
- Q. 4. a.** Define Rank and Nullity of a graph. **04**
- OR**
- a.** Define fundamental circuit.
- b. Attempt any TWO.** **06**
1. Prove that the maximum vertex connectivity of a graph G of n vertices and e edges ($e \geq n-1$) is the integral part of the $2e/n$.
 2. Define Eccentricity, center, distance
 3. Prove that connected planer graph with n vertices and e edges has $e-n+2$ regions.
- Q. 5. a.** Discuss Baruvka's algorithm to find minimum spanning tree. **04**
- OR**
- a.** Define planer graph and prove that complete graph of six vertex and ten edges is non-planer.

b. Attempt any TWO.

1. Find all spanning tree of a graph



2. Make Incident matrix of the following graph



3. State the observation about the path matrix



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B. Sc. IT. (Sem. - II) Examination April - 2025

Business Communication Skills in English (Paper 201)

[Total Marks: 25

સૂચન : / Instructions

(1)

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Fill up strictly the details of signs on your answer book

Name of the Examination:

B. Sc. IT. (Sem. - II)

Name of the Subject :

Business Communication Skills in English (Paper 201)

Subject Code No.: **2411001102050001**

Seat No.:

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Student's Signature

Q. 1. Do as directed: (Any 2)

10

1. Develop a small talk or expressions to discuss about the following topics at I.T Workplace,
 - a. Discussing about a new software
 - b. Latest trends in IT
2. How will you integrate LSRW skills in IT tasks? Explain with an example.
Task: Handling a customer support ticket related to website error.
3. Draft web content for a website selling Computer software.

Q. 2. Answer the following: (Any 2)

10

1. Draft a conversation between the team leader and the team for allocating the Modules of a project.
2. Give examples of internal formal and informal communication and external formal and informal communication.
3. You need to persuade the clients to buy a software newly designed by your Company. Write a persuasion note.

Q. 3. Do as directed: (Any 2)

05

1. Give a list of ten words to share good news and bad news in business.
 2. List the expressions used to express your enthusiasm during the interview.
 3. Give the meanings of the following business idioms and use them in sentences:
 - a. learn the ropes
 - b. not going to fly
-

2411001102070001
EXAMINATION MAR-APR - 2025
BACHELOR OF SCIENCE (I.T.) (M.SC. (I.T.)
5 YEAR INTEGRATED COURSE)
(NCF-NEP) (SECOND SEMESTER)
VAC-VALUE EDUCATION IN BHARATIYA
KNOWLEDGE SYSTEM - LEVEL 7

[Time: As Per Schedule]

[Max. Marks: 25]

Instructions:

1. नीचे दशविव विगतो उत्तरवडी पर अवश्य लखवी.

Fill up strictly the following details on your answer book

- a. Name of the examination : **B.SC. (I.T.) (M.SC. (I.T.)) (NCF-NEP) (SEM. II)**
b. Name of the Subject : **VAC-VALUE EDUCATION IN BHARATIYA KNOWLEDGE SYSTEM - LEVEL 7**
c. Subject Code No : **2411001102070001**
2. Sketch neat and labelled diagram wherever necessary
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

English Version

[Max. Marks: 25]

Q.1.

7 – MCQ (2 Marks each) (Any 5 out of 7)

(10)

1. How did the young boy respond to the challenge posed by his mother?
- (A) He failed to meet the challenge.
(B) He started crying and ran away.
(C) He levitated in the air without falling.
(D) He refused to participate in the challenge.

2. From where were the story of *Brahmin and Four Thieves* taken?
(A) Chandan (B) Panchatantra
(C) Ramayana (D) Mahabharata
3. How did Uddalaka test Shvetaketu's understanding of the knowledge of the Self?
(A) Quizzing him on scriptures
(B) Asking him to fast for a fortnight
(C) Sending him on a spiritual journey
(D) Advising him to meditate for hours
4. Which sentence was taught by Satyakam's mother?
(A) Aham Brahmasmi (B) Brahma
(C) Vasudev Kutumbakam (D) Swa
5. What did the Brahmin eventually do with the goat?
(A) Sacrificed it
(B) Ate it himself
(C) Left it on the road and ran home
(D) Shared it with the crooks
6. To whom did the fox entrust the task of bringing honey?
(A) Tigers (B) To the lions
(C) Bear (D) To the Varuis
7. What did the blue jackal assign to the smaller animals in his kingdom?
(A) Hunting duties
(B) Royal duties
(C) Protecting the kingdom
(D) Serving his other needs

Q.2. Write Following Answers (15)

Q.2. (a) Write a short note (Any 1 out of 2) (05)

1. Introduce defecation and satisfaction.
2. Describe us about the story 'Dirty Bath Water'.

Q.2. (b) Answer in Detail (Any 1 out of 2) (05)

1. Write a note on Brahmgyan and holistic knowledge of the universe imparted to Shvetaketu by Muni Uddalak.
2. Describe the story of "The Brahmin and the Thug" with enlightenment.

Q.2. (c) Explain Subhashit (Any 1 out of 2) (05)

1. न राज्यं न राजाऽआसीत् न दण्डयो न च दाण्डिकः।
धर्मणैव प्रजास्सर्वा रक्षन्त स्म परस्परम्॥
2. उदयमेन हि सिध्यन्ति कार्याणि न मनोरथैः।
न हि सुप्तस्य सिंहस्य प्रविशन्ति मुखे मृगाः॥

પ્ર.૧. 7 – MCQ (દરેકનો ૨ માર્ક્સ) (૭ માંથી કોઈ પણ ૫) (10)

1. યુવાન છોકરા એ તેની માતા દ્વારા ઉઠાવવામાં આવેલા પડકારનો કેવો પ્રતિભાવ આપ્યો?
 - (A) તે પડકાર ઝીલવામાં નિષ્ફળ ગયો
 - (B) તે રડવા લાગ્યો અને ભાગી ગયો.
 - (C) તે પડ્યા વિના હવામાં ઉછાળ્યો.
 - (D) તેણે ચેલેન્જમાં ભાગ લેવાની ના પાડી.
2. બ્રાહ્મણ અને ઠગોની વાર્તા શેમાંથી લેવામાં આવી છે?
 - (A) ચંદન
 - (B) પંચતંત્ર
 - (C) રામાયણ
 - (D) મહાભારત
3. ઉદાલકા એ શ્વેતકેતુની આત્મજ્ઞાનની સમજણની કસોટી કેવી રીતે કરી?
 - (A) તેને શાસ્ત્રો પર પ્રશ્નોત્તરી કરવી
 - (B) તેને પખવાડિયા સુધી ઉપવાસ કરવાનું કહેવું
 - (C) તેને આધ્યાત્મિક પ્રવાસ પર મોકલવો
 - (D) તેને કલાકો સુધી ધ્યાન કરવાની સલાહ આપવી

4. सत्यकामनी माताये क्यु वाक्य शीभव्युं हतुं?
- (A) अहम ब्रह्मास्मि (B) ब्रह्मा
(C) वसुदेव कुटुंबकम (D) स्व
5. आपरे ब्राह्मणे बकरी साथे शुं कर्तुं?
- (A) बलिदान आप्युं
(B) ते पोते भाधुं
(C) तेने रस्ता पर छोडी दीघो अने घरे भागी गयो
(D) तेने बढमाश साथे वहेंची लीधी
6. शियाणे मध लाववानुं काम कोने सोंप्युं?
- (A) वाघोने (B) सिंहोने
(C) रींछोने (D) वडुंछो ने
7. वादणी शियाण अे तेना राज्चमां नाना प्राणीओने शुं सोंप्युं?
- (A) शिकारनी इरजो
(B) रोयल इरजो
(C) राज्चनुं रक्षण करवुं
(D) तेनी अन्य जडुरियातो पूरी करवी

પ્ર.૨. નીચેના જવાબો લખો (15)

પ્ર.૨. (અ) ટૂંકનોંધ લખો (૨ માંથી કોઈ પણ ૧) (05)

1. શૌચ અને સંતોષનો પરિચય આપો.
2. 'ન્હાવાનું ગંદુ પાણી' વાર્તા વિશે જણાવો.

પ્ર.૨. (બ) સવિસ્તાર પ્રશ્ન (૨ માંથી કોઈ પણ ૧) (05)

1. પિતા ઉદાલક મુની દ્વારા શ્વેતકેતુને અપાયેલ બ્રહ્મજ્ઞાન અને બ્રહ્માંડની અખંડિત સમગ્ર જ્ઞાન વિશે નોંધ લખો
2. “બ્રાહ્મણ અને ઠગની” વાર્તા બોધ સાથે જણાવો.

પ્ર.૨. (ક) સુભાષિત સમજાવો (૨ માંથી કોઈ પણ ૧) (05)

1. ન રાજ્યં ન રાજાઽઆસીત્ ન દણ્ડયો ન ચ દાણ્ડિકઃ।
ધર્મેણૈવ પ્રજાસ્સર્વા રક્ષન્ત સ્મ પરસ્પરમ્॥
2. ડદયમેન હિ સિધ્યન્તિ કાર્યાણિ ન મનોરથૈઃ।
ન હિ સુપ્તસ્ય સિંહસ્ય પ્રવિશન્તિ મુખે મૃગાઃ॥

***** END *****