31172

NEP

B.C.A. I Semester Degree Examination, March/April 2022

COMPUTER APPLICATION

C-Programming (New)

Time : 3 Hours Max. Marks : 60

Instructions : 1) Part – ***A*** : Answer ***all ten*** questions ***(10×1=10)***.
2) Part – ***B*** : Answer ***any five*** questions ***(5×10=50)***.

PART – A (10×1=10)

1. Define variable. 1
2. Define data type. 1
3. What is operator ? 1
4. What do you mean by escape sequence in C ? 1
5. Write a syntax for simple if_else statement. 1
6. Define arrays. 1
7. Define pointer. 1
8. What is structure ? 1
9. Write a syntax of union in C. 1
10. What is return statement ? 1

PART – B (5×10=50)

1. a) Explain the basic structure of C-programming. 5
   b) Write a C-program to read radius of a circle and to find area of circumference. 5
2. a) Write any five rules for naming the variable in C. 5
   b) Explain about formatted input and output function. 5

P.T.O.

3. a) What is if_else ladder ? Describe syntax and working flowchart of if_else ladder. **5**

   b) Write a C-program to read a number and find the sum of the digits. **5**

4. a) How do you declare and initialize one dimensional array ? **5**

   b) Write any five advantages of using array in C. **5**

5. a) Explain the working of pointer in C. **5**

   b) Write any five disadvantages of pointer in C-programming. **5**

6. a) Describe how to access structure member, with simple example. **5**

   b) Define union. Describe the syntax of union. **5**

7. a) Write a difference between structure and union. **5**

   b) Write a C-program to swap two numbers using pointer. **5**

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NEP

B.C.A. I Semester (New) Degree Examination, March/April 2022

COMPUTER FUNDAMENTALS

Time : 3 Hours | Max. Marks : 60

Instructions : *1) Part – **A, all** questions are **compulsory**.*
*2) Part – **B,** answer **any five full** questions.*

PART – A **(10×1=10)**

1. 1) Who is the father of Computer ? Why ?
   2) Convert $(324)_{10}$ in BCD.
   3) Name any two super computers of India.
   4) 1 PetaByte (PB) = ? (TeraByte) (TB).
   5) What is Multiprogramming system ?
   6) Which unix command is used for moving and copying a file into a directory ?
   7) Write the difference between file system and DBMS.
   8) Expand DML and DCL.
   9) Write any two applications of Internet.
   10) Expand the term URL.

PART – B **(5×10=50)**

2. a) Explain the characteristics of computer. **5**
   b) What are the difference between compiler and Interpreter ? **5**
3. a) What is flowchart ? Draw a flowchart to find the largest of three numbers. **5**
   b) List the Input devices and explain any five input devices. **5**
4. a) What is Micro Controller ? Explain its features. **5**
   b) Explain with neat diagram windows explorer. **5**

P.T.O.

5.	a)	Write a short note on Micro Kernel.	5
	b)	Distinguish between main frame computer and Microcomputer.	5
6.	a)	What is Kernel ? Explain the features of UNIX-operating system.	5
	b)	What do you mean by Database Users ? Explain different types of Database Users.	5
7.	a)	Distinguish between system software and utility software.	5
	b)	Explain the important functions of operating system.	5
8.	a)	Define Internet ? List the services of Internet and explain in brief.	5
	b)	Write the full form of HTTPS ? Write the difference between http and https.	5

14122(Old)

B.C.A. I Semester Degree Examination, Nov./Dec. - 2018

COMPUTER APPLICATION

Accounting And Financial Management - I

(Old)

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates:

Answer any **FIVE** full questions. Calculator Allowed.

I. 1. Define Accountancy. **(2)**

2. Explain Advantages of Accounting. **(8)**

3. Distinguish between Book - keeping and Accounting. **(6)**

(2+8+6=16)

II. 1. Define Double entry system of Accounting. **(2)**

2. Define Assets and Liabilities. **(2)**

3. Define Journal and its features. **(6)**

4. Journalize the following transactions of Shri Shankar. **(6)**

2007

April 1 Shankar commenced business with cash Rs. 20,000.

April 4 Purchased goods from Ramesh Rs. 2,000 on credit.

April 6 Paid Ramesh Rs. 500 on Account.

April 8 Sold goods to Rajan Rs. 900 on credit.

April 12 Received from Rajan Rs. 300 on A/c.

April 16 Bought goods for cash Rs. 600.

April 18 Sold goods for cash Rs. 400.

April 23 Received Commission Rs. 50.

[P.T.O.

April 26 Withdrawn goods for domestic use Rs. 200.

April 30 Paid salary of Manager Rs. 700. **(2+2+6+6=16)**

III. 1. Define Ledger. **(2)**

2. Explain type of Subsidiary Book. **(6)**

3. Enter the following transaction in proper subsidiary book. **(8)**

April 1 Purchased goods from A Rs. 12,000.

April 2 Sold goods to Ramesh Rs. 15,000.

April 3 Bought goods from Dharwad Traders Rs. 5,000.

April 8 Ramesh claimed Rs. 200 for breakage and his claim is accepted.

April 10 Returned goods to A Rs. 400.

April 15 Goods bought from Dharwad Traders are in short supply claimed Allowance of Rs. 500.

April 18 Purchased goods from A Rs. 20,000.

April 20 Sold goods to Ramesh Rs. 18,000.

April 24 Received a debit note from Ramesh for shortage Rs. 200.

April 30 Bought goods from Dharwad Traders Rs. 8,000.

(2+6+8=16)

IV. 1. Explain types of Cash Book. **(6)**

2. Define Cash Book. **(2)**

3. Enter the following transactions of Jayadev in a cash book with discount and Cash Columns. **(8)**

2007

Jan 1	Commenced business with cash Rs. 10,000.
Jan 2	Paid into bank Rs. 8,500.
Jan 4	Bought goods for cash Rs. 1,000.
Jan 5	Sold goods for cash Rs. 1,800.
Jan 6	Bought office furniture and paid by cheque Rs. 600.
Jan 10	Paid Lucky Traders by cash Rs. 2,500 and was allowed discount Rs. 50.
Jan 12	Received cash from Umesh Rs. 700 and allowed him discount Rs. 20.
Jan 14	Paid Sharif and Co. by cheque on Account Rs. 900.
Jan 16	Received cheque from Vasant on Account Rs. 500.
Jan 17	Paid into bank Vasant's cheque Rs. 500.
Jan 20	Paid cash for printing charges Rs. 200.
Jan 26	Paid office rent by cheque Rs. 300.
Jan 28	Paid by cheque for personal use Rs. 400.
Jan 30	Withdrawn from bank for office use Rs. 550.
Jan 31	Paid for salaries Rs. 750.

(6+2+8=16)

V. 1. Explain types of Petty Cash Book. **(6)**

2. Define Petty Cash Book. **(2)**

3. From the following particulars. Prepare an analytical Petty Cash Book. **(8)**

1999

Nov 1	Received from cashier for petty cash Rs. 100.
Nov 4	Spent for postages Rs. 9.

Nov 6 Paid tax hire charges Rs. 7.

Nov 9 Paid for cartage Rs. 10.

Nov 10 Paid for stationery Rs. 17.

Nov 12 Sent telegram Rs. 2.

Nov 14 Entertainment expenses paid Rs. 12 for Visitors.

Nov 20 Paid for refreshments Rs. 16.

Nov 25 Paid to peons for arranging the meeting Rs. 5.

Nov 28 Paid telephone Bill Rs. 6.

Nov 30 Paid to Yashodha Rs. 3. **(6+2+8=16)**

VI. 1. Define Bank Reconciliation Statement. **(2)**

2. Explain types of Errors. **(6)**

3. From the following information prepare Bank Reconciliation statement as on 31-12-1999. **(8)**

a) Bank balance as per cash book as on 31-12-1999 Rs. 10,000.

b) Cheques issued in Dec 1999 but presented for payment in Jan. 2000 Rs. 900.

c) Bank charges debited in the pass book but not entered in the cash book Rs. 50.

d) Cheques paid into bank but not yet collected Rs. 1000.

e) Interest and divident credited only in the Pass book but there is no corresponding entry in cash book Rs. 250. **(2+6+8=16)**

VII. 1. Define Promissory Note. **(2)**

2. Explain Advantages of bill of exchange. **(6)**

3. Distinguish between Bill of exchange and promissory note. **(6)**

4. Define Drawee, Drawer. **(2)**

(2+6+6+2=16)

VIII. 1. Distinguish between Trial Balance and Balance sheet. **(6)**

2. From the following Trial Balance of Rajan as at 31-12-1998, Prepare his final A/c. **(10)**

Sl.No.	Name of Account	Dr.	Cr.
1.	Rajan's capital	-	29,000
2.	Rajan's Drawings	760	-
3.	Purchase and Sales	8,900	15,000
4.	Stock (1-1-98)	1,200	-
5.	Sales returns and purchase Returns	280	450
6.	Wages	800	-
7.	Buildings	22,000	-
8.	Freight and carriage	2,000	-
9.	Trade expenses	200	-
10.	Advertisement	240	-
11.	Interest	-	350
12.	Taxes and Insurance	130	-
13.	Debtors and creditors	6,500	1,200
14.	Bills receivable and Bills payable	1,500	700
15.	Cash at Bank	1,200	-
16.	Cash in hand	190	-
17.	Salaries	800	-

Adjustments:

a) Stock on 31-12-98 was valued at Rs. 1,500

b) Insurance was prepaid to the extent of Rs. 40.

c) Outstanding liabilities were:

Salary Rs. 200.

Taxes Rs. 130.

d) Depreciate Buildings by 20%. **(6+10=16)**

14128(Old)

B.C.A - I Semester Degree Examination, Nov./Dec. - 2018

COMPUTER APPLICATION

Basic Electricals And Electronics

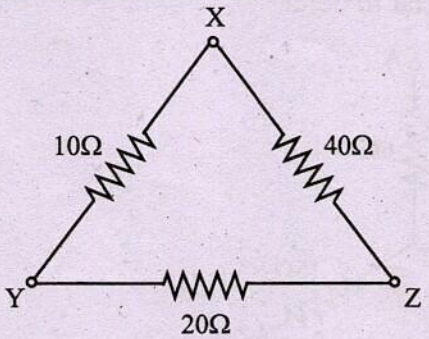
(Old)

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates:

Answer any **Five** full questions out of eight.

I.	a)	State Kirchhoff's' laws.	**(2)**
	b)	Explain Full wave rectifier with diagram.	**(6)**
	c)	Find Average value of sinusoidal current.	**(8)**
			(2+6+8=16)
II.	a)	What is a Oscillator?	**(2)**
	b)	Explain zener diode as voltage regulator.	**(6)**
	c)	Derive Expression for Amplitude modulated wave.	**(8)**
			(2+6+8=16)
III.	a)	What is modulation?	**(2)**
	b)	Convert Delta to star connection.	**(6)**

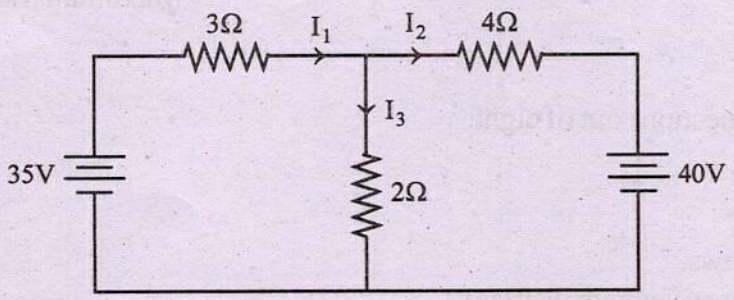


	c)	Explain R-L-C series circuit and find the impedance and power factor.	**(8)**
			(2+6+8=16)
IV.	a)	What is voltage regulation?	**(2)**
	b)	Explain op-amp as a non-inverting amplifier.	**(6)**
	c)	Explain addition of alternating quantities using Method of Components.	**(8)**
			(2+6+8=16)

[P.T.O.

V. a) State Norton's Theorem. (2)
b) Explain how phasor representation of sinusoidal wave form done. (6)
c) Explain V-I characteristic of diode. (8)
(2+6+8=16)

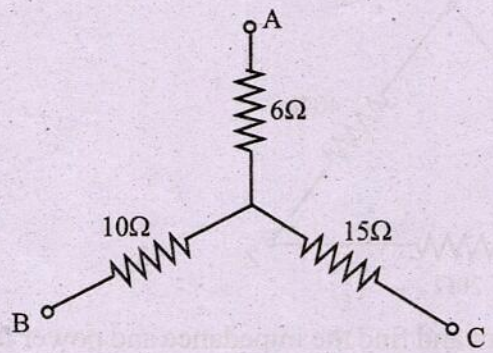
VI. a) Define peak factor and form factor. (2)
b) Write short note on wein bridge Oscillator. (6)
c) Find current in different branches of the circuit. (8)



(2+6+8=16)

VII. a) What are Extrinsic semiconductors? (2)
b) Find equation of alternating voltage and current. (6)
c) Find relationship between line voltage, phase voltage, line current and phase current in balanced Δ connection. (8)
(2+6+8=16)

VIII. a) State ideal op-amp characteristics. (2)
b) Convert the circuit from star to delta. (6)



c) Drawing Basic block diagram Explain Communication system. (8)
(2+6+8=16)

14129(Old)

B.C.A. I Semester Degree Examination, Nov./Dec. - 2018

COMPUTER APPLICATION

Logic Design

(Old)

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates:

Answer any **FIVE** full questions out of **Eight** questions.

1. a) What is Binary number system? **(2)**

b) Explain half adder using NAND gate and truth table. **(6)**

c) Covert the following **(8)**

i) $(1011.11001)_2 = (?)_{10}$

ii) $(21)_{10} = (?)_2$

iii) $(2632)_8 = (?)_2$

iv) $(A5)_{16} = (?)_2$

(2+6+8=16)

2. a) What is CMOS? **(2)**

b) Explain 2 input OR gate emitter coupled logic. **(6)**

c) Explain Ripple Counter. **(8)**

(2+6+8=16)

[P.T.O.

3. a) Give 2 difference between RAM and ROM. (2)

b) Explain S.R. flip flop in brief. (6)

c) Simplify Boolean expression (8)

i) $Y = AB + A(B+C) + B(B+C)$

ii) $Y = (A + \overline{B} + C) \cdot (\overline{A} + B + C)$

iii) $Y = ABC + AB\overline{C} + \overline{A}BC$

iv) $A\overline{BC} + \overline{ABC} + \overline{AB} + \overline{AC}$

(2+6+8=16)

4. a) State De Morgan theorem. (2)

b) Convert the following (6)

i) $(5386)_{10} = (?)_{16}$

ii) $(2F3)_{16} = (?)_{10}$

c) Explain properties of Boolean algebra. (8)

(2+6+8=16)

5. a) What is a Venn Diagram? (2)

b) Subtract the following using 2's complement (6)

i) 11001 – 10010

ii) $(57)_{10} - (28)_{10}$

c) Explain 2 I/P NAND gate using Transistor logic. (8)

(2+6+8=16)

6. a) What are synchronous counters? **(2)**

b) Perform operation using 9's and 10's complement **(6)**

i) 12 – 8

ii) 8 – 12

c) Draw Boolean expressions using basic gates **(8)**

i) $Y - AC + C(A + B)$

ii) $Y = \overline{W + P\bar{Q}}$

(2+6+8=16)

7. a) What is a flip flop? **(2)**

b) Subtract the following using 9's complement form and 10's complement form. **(6)**

i) 32-12

ii) 12-32

c) In a class of 200 students it was found that 100 students have taken Maths, 60 students have taken Biology and 40 have taken both maths and biology. How many students have not taken both draw venn diagram. **(8)**

(2+6+8=16)

8. a) Draw p-channel and n-channel MOS. **(2)**

b) Write short note on: **(6)**

i) BCD

ii) Octal Number system

iii) Hexadecimal number system

[P.T.O.

c) Convert the following: **(8)**

i) $(125.62)_8 = (?)_2(?)_{16}$

ii) $(10101101.0111)_2 = (?)_8(?)_{16}$

(2+6+8=16)

24124 (New)

B.C.A. I Semester Degree Examination, Nov./Dec. - 2018

COMPUTER APPLICATION

Basic Electrical And Electronics

(New)

Time : 3 Hours Maximum Marks : 60

Instructions to Candidates:

Part - A **ALL** questions compulsory (**1** mark) each. Part - B Answer any **5** questions out of **7** questions (**50** marks) **10** marks each.

PART - A

(10×1=10)

1. State Demorgan's Theorem. **(1)**

2. Convert the following.

$(536.65)_{10}$ to Hexadecimal number. **(1)**

3. What is MOS? **(1)**

4. Give two differences between p-type and n-type semiconductors. **(1)**

5. State Thevenin's Theorem. **(1)**

6. What is form factor? **(1)**

7. Give ideal Op-amp characteristics. **(1)**

8. What is a rectifier? **(1)**

9. Define RMS value of sinusoidal quantity. **(1)**

10. Give two differences between half wave rectifier and full wave rectifier. **(1)**

[P.T.O.

PART - B (5+5=10)

1. a) Explain Op-amp as an Inverting amplifier and derive expression for gain. (5)

   b) What is a zener diode? Draw its logic symbol and explain how zener diode is used as voltage regulator. (5)

(4+6=10)

2. a) Find average value of sinusoidal current. (4)

   b) Simplify the Boolean expressions. (6)

   i) $\overline{A\overline{B}C} + \overline{\overline{A}BC} + \overline{A}\overline{B}\overline{C} + \overline{A\overline{B}C}$

   ii) $\left[A + \overline{B} + \overline{C}\right]\left[A + \overline{B} + C\right]$

   iii) $AB + \overline{\overline{A}C} + A\overline{B}C\left(AB + C\right)$.

(4+6=10)

3. a) Explain 2-Input TTL NAND gate. (4)

   b) Convert the following (6)

   i) $(2616)_{10} = (?)_{16}$

   ii) $(95.5)_{10} = (?)_{8}$

   iii) $(10101.101)_{2} = (?)_{10}$.

(6+4=10)

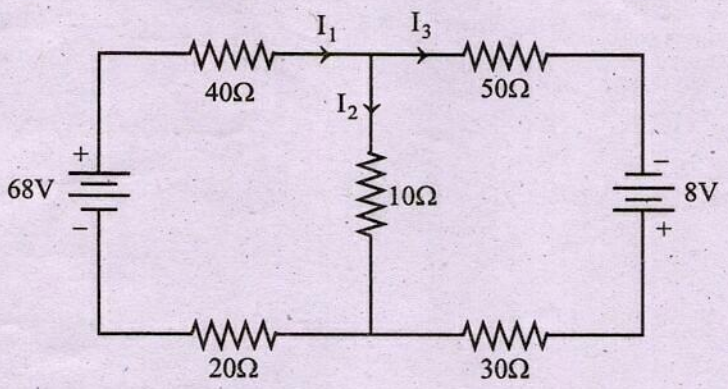
4. a) Explain any 6 properties of Boolean Algebra. (6)

   b) Find equation of alternating voltage and current. (4)

(4+6=10)

5. a) Explain operational amplifier as an Integrator. (4)

b) Find the current in all the branches of the circuit. (6)



(4+6=10)

6. a) How is phasor representation of sinusoidal quantity done. (4)

b) Subtract the following using 2's Complement form (6)

i) $(011100)_2 - (001111)_2$

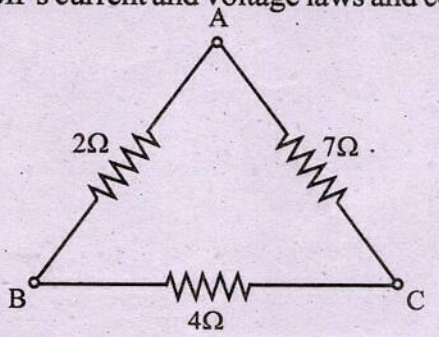
ii) $(15-7)_{10}$

iii) Convert $(A3B)_4 = (?)_{10}$.

(4+6=10)

7. a) Explain Bridge rectifier drawing circuit diagram and waveforms. (4)

b) State Kirchoff's current and voltage laws and convert the following circuit from delta to star. (6)



24123

B.C.A. I Semester Degree Examination Nov./Dec.-2018

C - PROGRAMMING

Paper : BCA - 1.2

Time : 3 Hours Maximum Marks : 60

PART - A

I. Answer **ALL** the 10 questions. **(10×1=10)**

1. What is a token?
2. Define Program.
3. Write a syntax for type conversion of a variable.
4. What is an arithmetic expression?
5. Write a syntax for defining a symbolic constant.
6. What is a difference between a variable and a constant?
7. What are jump-in loops?
8. What is a function?
9. What is a ternary operator?
10. What are escape sequence?

PART - B

II. Answer any **5** of the following. **(5×10=50)**

1. a) Explain the basic structure of a C language with a program example.
   b) Explain the classification of constants.
2. a) List and explain any two operators with examples.
   b) Explain formatted input and output functions.
3. a) Explain with syntax and flowchart of nested if ....else statement and else.....if statement with an example.
   b) Write a C program to generate first n Fibonacci numbers.
4. a) Write the differences between while loop and do.....while loop.
   b) What are arrays? How do you declare and initialize 2D arrays?

[P.T.O.

5. a) Explain any 5 string handling functions.

   b) Write a C program to accept a number and compute its factorial by recursive function.

6. a) Distinguish between :

   i) Arguments and parameters.

   ii) Local variables and global variables.

   b) Define structure. Explain the general syntax of structure with an example.

7. a) What are pointers? Write a C program to swap two number using pointers.

   b) Describe the classification of data types.

24125 (New)

B.C.A. I Semester Degree Examination, Nov./Dec.- 2018

COMPUTER APPLICATION

Computer Fundamentals And Office Automation

(New)

Time : 3 Hours Maximum Marks : 70

Instructions to Candidates:

Part A : All questions Compulsory (1 mark) each.

Part B : Answer any **5** questions out of 7 questions (**60** Marks) **12** marks each.

PART - A

I. 1. Define Desktop. **(10×1=10)**

2. Mention any 4 o/p device.

3. Define software. List different types of software.

4. Define cell and cell address.

5. What is a compiler?

6. Define Internet.

7. Define folder.

8. Define chart. List different types of chart.

9. What is word processor?

10. Define window.

PART - B

I. a) Define computer . Draw a Neat block diagram of computer and Explain. **(6)**

b) Explain generation of computers. **(6)**

(6+6=12)

II. a) Explain application of Computer. **(6)**

b) Explain types of software. **(6)**

(6+6=12)

[P.T.O.

III. a) Explain parts of Ms -word with a neat diagram. (6)

b) Explain steps for Mail Merge. (6)

(6+6=12)

IV. a) Explain Maths function in Ms Excel. (6)

b) Explain components or elements of charts. (6)

(6+6=12)

V. a) Differentiate between primary memory and secondary memory. (4)

b) Explain view's in Power point. (8)

(4+8=12)

VI. a) Explain Internal Dos commands. (6)

b) Explain types of operating system. (6)

(6+6=12)

VII. a) Explain steps for sending and receiving a mail. (6)

b) Explain types of Networking. (6)

(6+6=12)

95505(NEW)

(NEP)

B.A./B.Sc./B.Com./B.B.A./B.C.A. I Semester Degree Examination, February/March-2023

COMPUTER SCIENCE (New)

Office Automation

Paper : OE - 1

Time : 3 Hours **Maximum Marks : 60**

Instructions to Candidates :

1) **Part - A** : **ALL** questions are compulsory.
2) **Part -B** : Answer any **FIVE** full questions.

PART - A

Answer **ALL** questions. **(10×1=10)**

1. a) Define Computer.
   b) List any two input devices.
   c) ALU stands for?
   d) Give the different types of Memory.
   e) Define Mail Merge.
   f) Define Chart.
   g) Define Header and Footer.
   h) URL stands for?
   i) What is Search Engine?
   j) Define E-mail.

PART - B

Answer any **FIVE** full questions. **(5×10=50)**

2. a) Explain with neat diagram the functional components of a Computer.
   b) Explain the generations of Computers with an example.

3. a) Explain the different types of printers with neat diagram.
   b) Give the different types of applications of Computer and explain in brief.

4. a) Explain the different steps involved in creating Mail Merge.
   b) Explain the applications/usage of spread sheet.

[P.T.O.

5. a) Explain pie-chart and line chart.
   b) Explain the procedure of formating worksheet.

6. a) Explain in brief the adding of Header and Footer in the presentation.
   b) Define Power Point. Give its features and uses.

7. a) Define Browser. Explain different types of Browsers.
   b) Give the different uses of Internet in detail.

8. a) Name different search engines and explain in brief.
   b) Give advantages and disadvantages of E-mail.

31172

(NEP)

B.C.A. I Semester Degree Examination, February/March - 2023

COMPUTER APPLICATION

C-Programming

Time : 3 Hours **Maximum Marks : 60**

Instructions to Candidates :

1) **Part - A** : Answer **ALL Ten** questions.
2) **Part -B** : Answer any **FIVE** full questions.

PART - A

I. Answer **ALL** the following questions. **(10×1=10)**

1) Who developed C programming language?
2) Define C-tokens.
3) List unformatted input functions.
4) What is decrement operator?
5) Give the syntax of simple if-statement.
6) What is an Array?
7) What is string?
8) Define function.
9) What is pointer variable?
10) Define Union.

PART - B

II. Answer any **FIVE** full questions. **(5×10=50)**

1. a) Explain structure of C-program.
   b) Explain different data types available in C-programming.

2. a) Write a note on formatted I/O functions.
   b) Explain relational and logical operators.

3. a) Explain Do-while loop.
   b) Write a C-program to find the roots of quadratic equation using switch statement.

[P.T.O.

4. a) Explain string handling function.
   b) Write a C-program to read three numbers and find the biggest of three.

5. a) Explain "function with arguments and with return value".
   b) What is Recursion? Write a C-program to illustrate recursion.

6. a) Write the advantages and disadvantages of pointers.
   b) Write the difference between structures and unions.

7. a) How do you declare and initialize pointers?
   b) Write a C-program to check whether the given number is prime or not?

31171

(NEP)

B.C.A. I Semester Degree Examinations, February/March - 2023

COMPUTER APPLICATIONS

Computer Fundamentals

Paper : 21BCA DSC 1

Time : 3 Hours **Maximum Marks : 60**

Instructions to Candidates:

1. *Part A : All questions are compulsory.*
2. *Part B : Answer any Five full questions.*

PART - A

I. Answer **ALL** the following questions. **(10×1=10)**

1. a) Define Computer.
   b) Mention different types of Computers.
   c) What is Volatile memory?
   d) What is Unicode?
   e) Define Software.
   f) What is an Operating System?
   g) Expand ASCII.
   h) List out the Secondary memory devices.
   i) List out any two Web browsers.
   j) List out Internet service providers.

PART - B

II. Answer any **FIVE** full questions. **(5×10=50)**

2. a) Explain in brief the evolution of Computers.
   b) Explain the functional units of a Computer.
3. a) Explain the languages of Computer.
   b) Explain language translators.
4. a) Explain any two input devices with a neat labelled diagram.
   b) Explain the characteristics of Computer System.

[P.T.O.

5. a) Explain Database-file system Vs DBMS.

   b) Explain classification of SQL.

6. a) Write down the applications of Internet.

   b) Explain WWW.

7. a) Explain CSS.

   b) Explain DNS.

8. a) Explain the classification of Operating System.

   b) Draw a flowchart to find out whether the number is even or odd.

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(NEP)

B.C.A I Semester Degree Examination, February/March - 2023

COMPUTER APPLICATIONS

Digital Logic And Computer Design

Paper : CAC 03

Time : 3 Hours Maximum Marks : 60

Instructions to Candidates:

1. *Part - A : ALL questions are compulsory.*
2. *Part-B: Answer any FIVE full questions.*

PART - A

(10×1=10)

1. What is Binary number?
2. Convert: $(36)_{10} \rightarrow (?)_2$.
3. What is meant by Boolean Algebra?
4. What is a Karnaugh - Map?
5. What is Half - Adder?
6. What is Binary parallel adder?
7. What are the two types of flip-flop?
8. What is clock?
9. What is memory unit?
10. What are the two types of counters?

PART - B

(5×10=50)

I. Subtract the following Binary numbers:

a. i) $(1110)_2 - (0011)_2$

ii) $(10000)_2 - (11)_2$ (5)

iii) Using 2's complement to perform (m-n).

i) $m = (0111)_2$

ii) $n = (0010)_2$

b. What is binary logic? Explain AND, OR, NOT, NAND and NOR gates. (5)

[P.T.O.

II. a. Write a short note on binary storage and registers. (5)

b. What is meant by boolean algebra? Write the laws and theorems of boolean algebra. (5)

III. a. Implement the following function with NAND gates:

i) $f = \overline{A}+BC$ (5)

b. Simplify the Boolean function using Karnaugh-map method:

i) $F(A,B,C) = \sum(0,1,2,3,8,9,10,11,5,7,13,15)$ (5)

IV. a. What is full subtractor? Explain its working with the help of truth table and logic circuit. (5)

b. What is decoder? Explain 3 to 8 line decoder. (5)

V. a. Design a code converter that converts a BCD to excess - 3 code. (5)

b. What is Flip-Flop? Explain JK flip-flop with logic diagram and its characteristic table. (5)

VI. a. Explain the working of master-slave JK flip-flop. (5)

b. Explain triggering of flip-flop. (5)

VII. a. What is shift register? Explain any one type of shift register. (5)

b. Write a short note on RAM. (5)

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B.C.A. I Semester Degree Examination, March/April 2022
COMPUTER APPLICATION
CAC02 : Digital Logic and Computer Design (New)

Time : 3 Hours Max. Marks : 60

Instructions : 1) Part – ***A*** : Answer ***any ten*** of the following.
2) Part – ***B*** : Answer ***any five full*** questions.

PART – A **(10×1=10)**

1. Define binary number system.
2. Define boolean Algebra.
3. Define half-adders.
4. Mention any two logic gates.
5. Define ripple counter.
6. What are registers ?
7. Expand RAM and ROM.
8. What are universal logic gates ? Mention them.
9. Convert the following to binary

PART – B (5×10=50)

2. a) Explain different number systems with suitable examples for it. 5

   b) Convert the following :

      i) $(526.44)_8 \rightarrow (?)_{10}$

      ii) Using 2's complement to perform (m – n)

      m = 10101000

      n = 1000100 5

3. a) Explain any five properties of boolean algebra. 5

   b) Simplify boolean function using Karnaugh map method 5

   $f(x, y, z) = \Sigma(0, 2, 4, 5, 6)$

4. a) Explain substractor in detail with suitable circuit diagram. 5

   b) Explain different logic gates in detail with suitable diagram and truth table. 5

5. a) Explain combinational logic circuits in detail with suitable examples. 5

   b) Explain applications of shift registers. 5

6. a) Explain addressing modes. 5

   b) Explain semiconductor RAM memories. 5

7. a) Write short note on CPU organization. 5

   b) Explain assembly language and high level language. 5

8. a) Explain types of registers in detail. 5

   b) Explain ripple counters. 5

$(65)_{10} \rightarrow (?)_2$.

10. Define combinational logic.

11. Define addressing modes.

12. Define binary code.