

**I-S-NEP-BCA-Major-1-P-1-Problem Solving Using C
Prog.**

2024

Time :As in Programme

Full Marks : 100

The figures in the right-hand margin indicate marks.

Answer all the questions

PART-I

1. Answer all questions.

1x10

a. A C variable cannot start with

i) An alphabet

ii) A number

iii) A special symbol

iv) Both (ii) and (iii) above

b. Which of the following statement is wrong?

i) $x = 12;$

ii) $ch = 'A' * 'B';$

iii) $a = 10 + b;$

iv) $x + y = z;$

c. The expression $x = 4 + 2 \% -8;$ evaluates to

i) -6

ii) 6

iii) 4

iv) None of the above

d. Given the statement, `maruti.engine.bolts=30;`

Which of the following is true?

i) `structure bolts` is nested within `structure engine`.

ii) `structure engine` is nested within `structure bolts`.

iii) `structure maruti` is nested within `structure engine`.

iv) `structure maruti` is nested within `structure bolts`.

(Turn Over)

- e. On opening a file for reading which of the following activities are performed?
- i) The disk is searched for the existence of file.
 - ii) A pointer is set up which points to the first character in the file.
 - iii) Reading continues till EOF.
 - iv) All the above.
- f. Which is more appropriate for reading a multiword string?
- i) gets()
 - ii) printf()
 - iii) scanf()
 - iv) puts()
- g. Which element of the array does this expression refer to?
ar[4]
- h. Which operator can not be used with real operands?
- i. Which location is pointed by the file pointer fp after execution of fseek(fp,0,2); ?
- j. Which of the following is executed by preprocessor?
- i) #include <stdio.h>
 - ii) return 0;
 - iii) void main(int argc, char argv[]).
 - iv) None of the above.

PART-II

2. Answer the following questions in 50 words each. 2x9
- a. Evaluate the following arithmetic expression.
 $x = 5 * 4 / 2 + 12 - 6 / 3 + 7 * 3$ (Assume x is an integer)
 - b. Mention the library functions used for dynamic memory management.

- c. Write the output of the following code.

```
#include<stdio.h>
void main()
{
int a=12,b=8,c;
c= ++a - b++;
printf("%d %d %d",a,b,c);
}
```

- d. What is wild pointer? Give an example.

- e. Write the syntax of switch statement.

- f. Does 'x' differ from "x"? Justify.

- g. Write the output of the following code.

```
#include<stdio.h>
void main()
{
int num= -5 ,j;
j= (num < 0 ? num+4 : num*num);
printf("%d %d " ,j,num);
}
```

- h. What is the need of a return statement in a function?

- i. Convert the following expression into its equivalent C statement.

$$p^2 + 4pq + 7q^4$$

PART-III

3. Answer any eight questions of the followings in 250 words each.

5x8

- Differentiate between while and do-while.
- Write a program to interchange the values of two variables without using third variable.
- Explain self-referential structure with example.

- d. Write a program to print the following series of integers.
1,2,4,8,16,32...
- e. Write a program to enter the elements into a 2D array of order 2*3 and display the elements.
- f. Explain various relational and logical operators.
- g. Write a program to count the number of characters in a string without using strlen().
- h. Differentiate between structure and union with example.
- i. Discuss different types of storage class used in C programming.
- j. Write a program to input a number and find the reverse of it.

PART-IV

Answer any four of the following in 800 words each. 8x4

4. a. Write a program to input ages of three brothers and find out the youngest one. 5
- b. State the concept of operator precedence and associativity. 3
5. a. Write a program to evaluate 1-2+3-4+5-6... up to n terms. 4
- b. Write a program to compute the factors of a given number. 4
6. a. Write a program to calculate factorial of a number using recursion. 5
- b. Differentiate between call by value and call by reference. 3
7. a. Write a program to print the even value elements of an array. 5
- b. Discuss the operations those are allowed on pointers. 3
8. What is command line argument? Write a program to create a file, input text data into it and display the file content. 3 + 5



I-S-NEP-BCA-Minor-1-P-1-Digital Logic

2024

Time :As in Programme

Full Marks : 100

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Answer all the questions

PART-I

1. Answer all questions. 1x10
- a. What is a Circuit?
 - i) Open-loop through which electrons can pass
 - ii) Closed-loop through which electrons can pass
 - iii) Closed-loop through which Neutrons can pass
 - iv) None of the mentioned
 - b. Which of the following digital logic circuits can be used to add more than 1 – bit simultaneously?
 - i) Full – adder
 - ii) Ripple – carry adder
 - iii) Half – adder
 - iv) Serial adder
 - c. Which of the following options represent the synchronous control inputs in an S – R flip flop?
 - i) S
 - ii) R
 - iii) Clock
 - iv) Both S and R

- d. What is the group of 1s in 4 cells of a K – map called?
- i) Pair
 - ii) Quad
 - iii) Octet
 - iv) Octave
- e. What is the group of 1s present in 8 cells of a K – map called?
- i) Pair
 - ii) Quad
 - iii) Octet
 - iv) Octave
- f. The result " $X + XY = X$ " follows which of these laws?
- i) Consensus law
 - ii) Distributive law
 - iii) Duality law
 - iv) Absorption law
- g. Which of the following is an example of a digital Electronic?
- i) Computers
 - ii) Information appliances
 - iii) Digital cameras
 - iv) All of the mentioned
- h. The instruction used in a program for executing them is stored in the _____
- i) CPU
 - ii) Control Unit
 - iii) Memory
 - iv) Microprocessor

- i. A flip flop stores _____
- i) 10 bit of information
 - ii) 1 bit of information
 - iii) 2 bit of information
 - iv) 3-bit information
- j. The full form of PLD is _____
- i) Programmable Large Device
 - ii) Programmable Long Device
 - iii) Programmable Logic Device
 - iv) Programmable Lengthy Device

PART-II

2. Answer the following questions in 50 words each. 2x9
- a. What is the advantage of using a k-map ?
 - b. Differentiate between SRAM and DRAM.
 - c. What is a Flip Flop ?
 - d. What is Flash Memory ?
 - e. What is Half adder?
 - f. What is the function of cache Memory?
 - g. What is meant by Master slave Flip Flop ?
 - h. What is mean by precession in number representation.
 - i. What is the dual of $A+(B+C)=(A+B).(A+C)$.

PART-III

3. Answer any eight questions of the followings in 250 words each. 5x8
- a. State and Prove De Morgan's theorem.
 - b. Convert binary number 10010110.1001 to decimal and octal number.

- c. Simplify the Boolean function $F(A,B,C,D) = \sum (0,1,2,5,8,9,10)$ as
- Sum of products
 - Product of sums
- d. Discuss briefly the Full adder with the truth table and circuit.
- e. What is Flip-Flop? Why we need it?
- f. Explain the IEEE 754 in single precision and double precision.
- g. Define Dual and Complement in Boolean Algebra. Find the Dual and Complement of the expression: $F = A + (B \cdot 0)$
- h. Definition of EEPROM (Electrically Erasable Programmable Read-Only Memory).
- i. Differentiate between ROM vs RAM.
- j. What is optical disk & explain how data is stores and retrieve.

PART-IV

Answer any four of the following in 800 words each. 8x4

4. Convert the decimal number 756.6875 to its binary, octal, and hexadecimal equivalents.
Also explain the steps involved in each conversion.
5. Explain the internal organization and working of SRAM and DRAM. Compare them in terms of speed, size, cost, and application.
6. Difference between Synchronous and Asynchronous counters.
7. State and prove any four Boolean laws with truth tables.
8. Explain the different types of ROM. Discuss their working and applications.



2024

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Answer **all** the questions

PART-I

1. Answer all questions. 1x10
- a. What is physical environment?
 - b. GHG stands for?
 - c. The unit of radiation is _____.
 - d. In _____ year the world population day is observed.
 - e. What is genetic diversity?
 - f. Which gas is being used to run vehicles now a days?
 - g. Define Non-Renewable Resource.
 - h. Overgrazing adversely effects _____.
 - i. Who is the head of SDMA?
 - j. In _____ year environmental protection act was enacted.

PART-II

2. Answer the following questions in 50 words each. 2x9
- a. Write two methods for controlling human population?
 - b. Describe any two importance of Biodiversity.
 - c. What is deforestation?
 - d. State the term "The Red Data Book".
 - e. In which year ODRAF was established?
 - f. Define the term Vulnerability.
 - g. What do you mean by Ex-Situ Conservation?
 - h. Which Act has been enacted by the parliament for protection of wild animals and birds?
 - i. Define Climate Change.

(Turn Over)

PART-III

3. Answer any eight questions of the followings in 250 words each.

5x8

- a. Discuss the major types of environmental pollution and elaborate on their control measures.
- b. Describe India as a Mega-Diversity nation.
- c. Explain about Institutional framework, preparedness measures, and Community participation in disaster management.
- d. What is global warming? Discuss the various reasons and effects of global warming.
- e. Explain the causes, effects, and control measures of soil pollution.
- f. How public awareness is important in environmental studies?
- g. Write a short note on survival skills.
- h. Discuss the causes, effects, and control measures of water pollution.
- i. What is forest resource? Describe the different uses of forest resources.
- j. Describe the process of urbanization and its effects on society.

PART-IV

Answer any four of the following in 800 words each.

8x4

4. Discuss the causes and effects of air pollution, providing examples each.
5. Define the term "Biodiversity" and explain the concept of hotspots of biodiversity with examples.
6. Describe various steps of Government and NGO in disaster management.
7. What are the key components of the Disaster Management Cycle and explain the significance of each phase in reducing the impact of disasters.
8. Discuss various Air and Water Prevention Act.

I-S-NEP-BCA-MDC-II-Computer Fundamental

2024

Time :As in Programme

Full Marks : 100

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Answer all the questions

PART-I

1. Answer all questions. 1x10
- Part of a computer that processes all instruction _____.
 - The first generation of computers used which technology?
 - Which language does the computer understand?
 - _____ is responsible for carrying out arithmetic and logicoperation.
 - _____ memory could not store data and information permanently.
 - Scanner is a _____ device
 - Which type of software is designed to control the operations of a computer?
 - The full formof WWW is _____.
 - Hub is used in _____ topology.
 - Which of the following is the smallest unit of data in a computer?
i. Bit ii. Byte iii. Kbiv. Gb

PART-II

2. Answer the following questions in 50 words each. 2x9
- What is flow chart?
 - Differentiate between hardware and software.
 - Differentiate between cache memory and register..
 - Differentiate between RAM and ROM.
 - Differentiate between system software and application software.

(Turn Over)

- f. What is firmware?
- g. Write any two advantages of Peer to peer computing.
- h. Define middleware.
- i. What is e-learning?

PART-III

3. Answer any eight questions of the followings in 250 words each.

5x8

- a. Write some characteristics of a computer.
- b. Discuss various generation of a computer.
- c. Differentiate between primary memory and secondary memory.
- d. Write some components and characteristics of a computer network.
- e. Briefly explain about five input devices.
- f. Differentiate between LAN, MAN and WAN.
- g. Write some services provided by an operating system.
- h. Write the difference between internet and WWW.
- i. What is email? Write some steps to send or receive an email.
- j. Explain different types of e-banking services in detail.

PART-IV

Answer any four of the following in 800 words each.

8x4

- 4. Explain the basic structure and working of a computer with a suitable block diagram. 8
- 5. Explain the type of network topologies with suitable diagram. 8
- 6. Discuss different types of memory in detail. 8
- 7. a. Define flow chart. Discuss about different symbols used in flow chart. Draw a flow chart to check a number is even or odd. 5
- b. Write an algorithm to find sum and average of three input number. 3
- 8. Define the cloud computing. Explain about different types of cloud computing services and deployment models. 8



(2)

2024

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Answer all the questions

विभाग - क

1. निम्नलिखित प्रश्नों का उत्तर 1 या 2 शब्दों में दीजिये । 1x10
- (क) अंग्रेजी में प्रयोजनमूलक हिंदी को क्या कहते हैं ?
- (ख) संविधान की आठवीं अनुसूची में आज कितनी भाषायें उल्लिखित हैं ?
- (ग) संसदीय राजभाषा समिति, 1957 के अध्यक्ष कौन थे ?
- (घ) टिप्पणी को अंग्रेजी में क्या कहते हैं ?
- (ङ) कौन हमारे हृदय की भावनाओं को खोल कर रख देते हैं ?
- (च) Approval का हिंदी शब्द क्या है ?
- (छ) प्रसारण का अंग्रेजी शब्द क्या है ?
- (ज) डिफरेंस इंजन का निर्माण किसने किया था ?
- (झ) डॉ. रघुवीर किस सिद्धान्त के समर्थक थे ?
- (ञ) मेमोरी कितने प्रकार की होती है ?

विभाग - ख

2. किन्हीं 9 प्रश्नों का उत्तर 1-2 वाक्यों में दीजिये । 2x9
- (क) प्रयोजनमूलक हिंदी की कोई एक परिभाषा दीजिये ।
- (ख) 'ख' क्षेत्र में कौन-कौन से राज्य आते हैं ?
- (ग) टिप्पणी की परिभाषा कैसी होनी चाहिये ?
- (घ) अंतर्राष्ट्रीयतावादी सिद्धान्त का दूसरा नाम क्या है ?
- (ङ) Action as proposed may be taken - का हिंदी अनुवाद क्या है ?

- (च) संबंधित कागज लेकर विचार - विमर्श करें - का अंग्रेजी अनुवाद क्या है ?
 (छ) पारिभाषिक शब्दावली की एक परिभाषा लिखिये ।
 (ज) पल्लवन की परिभाषा दीजिये ।
 (झ) संकल्प किसमें प्रकाशित किया जाता है ?
 (ञ) डाटा संसाधन से क्या अभिप्राय है ?
 (ट) कंप्यूटर की परिभाषा लिखिये ।

विभाग - ग

3. किन्हीं 8 प्रश्नों का उत्तर 200 शब्दों में दीजिये । 5x8
- (क) प्रयोजनमूलक हिंदी की क्या-क्या समस्याएँ हैं ?
 (ख) मुंशी आयांगर फॉर्मूला क्या है ?
 (ग) हिंदी के कार्यसाधक ज्ञान से क्या अभिप्राय है ?
 (घ) आलेखन की भाषा कैसी होनी चाहिये ?
 (ङ) व्यक्तिगत पत्र की भाषा-शैली कैसी होती है ?
 (च) पारिभाषिक शब्दावली के अर्थ और स्वरूप पर प्रकाश डालिये ।
 (छ) माइक्रो कम्प्यूटर किसे कहते हैं ?
 (ज) संक्षेपण के स्वरूप की चर्चा कीजिये ।
 (झ) पारिभाषिक शब्दावली का स्वरूप क्या है ?
 (ञ) भारत में कम्प्यूटर की विकास यात्रा का परिचय दीजिये ।

विभाग - घ

- किन्हीं 4 प्रश्नों का उत्तर 500 शब्दों में दीजिये । 8x4
4. प्रयोजनमूलक हिंदी के भेदों का सविस्तार आकलन कीजिये ।
 5. वैश्वीकरण के दौर में हिंदी के विविध रूपों की चर्चा कीजिये ।
 6. आलेखन की परिभाषा देते हुये उसकी विशेषताओं पर प्रकाश डालिये ।
 7. विविध आधारों पर पारिभाषिक शब्दावली के भेदों का विवेचन कीजिये ।
 8. कम्प्यूटर के विविध प्रकारों का विवेचन कीजिये ।

