

JE-111

January-2024

B.C.A., Sem.-I

DSC-C-BCA-111 T

Elements of Programming & Computer Organization (Theory)

Time : 2 Hours]

[Max. Marks : 50

1. (a) Explain the basic structure of a C program with an example of it. 5
1. (b) Explain the difference between high level language and assembly level language. 5

OR

1. (a) Explain machine level language and its benefits and drawbacks. 5
1. (b) Explain different rules for the naming of a variable with an example. 5
2. (a) Define Loop and differentiate while and do.. while loop with an example. 5
2. (b) Explain different types of "If statements" with an example of each. 5

OR

2. (a) Explain the use of switch statement in a program with an example of it. 5
2. (b) Explain unary, binary and ternary operators with its examples. 5
3. (a) Explain various logic gates with its symbols and truth tables. 5
3. (b) Explain the working of a 4 bit binary Adder – Subtractor. 5

OR

3. (a) What is a flip – flop ? Explain its types with a block diagram and truth table. 5
3. (b) What is normalization ? Explain the use of mantissa and exponent to make a number normalized. 5

4. (a) Draw and explain Instruction Cycle Flowchart.
4. (b) Explain the working of DMA in a basic computer system.

OR

4. (a) Explain 3 address, 2 address, 1 address and 0 address instruction formats.
4. (b) List cache memory mapping schemes and explain "set-associative" in detail.
5. Attempt any **ten** out of **twelve** :
(1) Single line comment in a C program is shown with _____ symbol.
(2) Header file has _____ extension.
(3) Machine language is a symbolic language. (True / False)
(4) 'C' is a character constant. (True / False)
(5) What is the use of size of () operator ?
(6) Give an example of Type Casting.
(7) _____ circuit performs addition of 2 binary bits.
(8) Register PC is defined as _____.
(9) 2's Complement of 111000 is 000111. (True / False)
(10) Handshaking technique is used for asynchronous data transfer. (True / False)
(11) What is circular shift micro-operation ?
(12) Which circuit is used to represent Octal to Binary conversion ?