

Enrollment No.....



Faculty of Science
End Sem (Odd) Examination Dec-2017
BC3CO02 Problem Solving and Programming-I
Programme: B.Sc.(CS) Branch/Specialisation: Computer Science

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Diamond shape in flow chart denotes 1
(a) Start (b) Decision
(c) End (d) Input - Output task
- ii. The_____is a program-planning tool that allows the 1
programmers to plan program logic by writing program instructions
in an ordinary language
(a) Flowchart (b) Pseudocode (c) Program (d) Looping
- iii. Which of the following function is used to send the output to the 1
console?
(a) scanf() (b) getch() (c) printf() (d) clrscr()
- iv. Which of the following is FALSE in C? 1
(a) Keyword can be used as variable names
(b) Variable names can contain a digit
(c) Variable names do not contain a blank space
(d) Capital letters can be used in variable names
- v. What is the final value of x when the code int x; 1
for(x=0;x<=10;x++){ } is run ?
(a) 10 (b) 9 (c) 0 (d)11
- vi. “continue” statement when executed the control is 1
transferred_____ 1
(a) Outside the loop ,to the next statement after the loop
(b) Beginning of the loop i.e. to the first statement in the loop
(c) Outside the function, to the next function in the program
(d) Beginning of the function i.e. to the first statement in the function

[2]

- vii. The index of the last element of an array of „n“ elements will be_____ **1**
(a) N+1 (b) N (c) N-1 (d) None of these
- viii. To accept a string from user, which of the following is used **1**
(a) getchar() (b) putchar() (c) gets() (d) puts
- ix. What is the similarity between a structure, union and enumeration? **1**
(a) All of them let you define new values
(b) All of them let you define new datatype values
(c) All of them let you define new pointers
(d) All of them let you define new structures
- x. The total memory space allocated for a variable of a union is equal to_____ **1**
(a) Memory space required by the largest member variable of the structure
(b) Sum of memory space required by the all member variable of the structure
(c) 100 bytes
(d) None of these
- Q.2 i. What is Flowchart? How it is different from algorithm? **4**
ii. Write the algorithm and draw the flow chart to find factorial of a given number. **6**
- OR iii. Write the algorithm and draw the flow chart to print all odd numbers upto100. **6**
- Q.3 i. What do mean by Character set? **2**
ii. Explain constant, variable and keyword in detail. **8**
- OR iii. What do mean by scope and lifetime of a variable? Explain storage classes (auto, static, register and extern) using suitable example. **8**
- Q.4 i. What is the use of “sizeof” in C? **2**
ii. Compare break and continue statements using example. **3**
iii. What are the various loop constructs available in C. Distinguish between while and do- while loops. **5**
- OR iv. Explain the following using general syntax and example. **5**
(a) if (b) if-else (c) goto

[3]

- Q.5 i. What is an array? Explain the features of an array and their uses. **4**
ii. Write a program to multiply two 3*3 matrix. **6**
- OR iii. What do you understand by strings? How do you declare a string? **6**
Explain following function strlen(), strcpy(), strcat(), strcmp().
- Q.6 Attempt any two:
- i. What is a pre-processor? What are the advantages of pre-processor? **5**
Explain two forms of #include directive.
- ii. What is union? Explain its advantage with respect to structure using suitable example. **5**
- iii. Write a C Program to Store Student Information Like (Name, Roll & Marks) Using Structure. **5**

BC3CO02 Problem Solving and Programming-I

Marking Scheme

Q.1	i.	Diamond shape in flow chart denotes (b) Decision	1				
	ii.	The_____is a program-planning tool that allows the programmers to plan program logic by writing program instructions in an ordinary language (b) Pseudocode	1				
	iii.	Which of the following function is used to send the output to the console? (c) printf	1				
	iv.	Which of the following is FALSE in C? (a) Keyword can be used as variable names	1				
	v.	What is the final value of x when the code <code>int x; for(x=0;x<=10;x++){ }</code> is run ? (d)11	1				
	vi.	“continue” statement when executed the control is transferred_____ (b) beginning of the loop i.e. to the first statement in the loop	1				
	vii.	The index of the last element of an array of „n“ elements will be_____ (c)n-1	1				
	viii.	To accept a string from user, which of the following is used (c) gets()	1				
	ix.	What is the similarity between a structure, union and enumeration? (b) All of them let you define new data type values	1				
	x.	The total memory space allocated for a variable of a union is equal to_____ (a) Memory space required by the largest member variable of the structure	1				
Q.2	i.	What is Flowchart? How it is different from algorithm? 2 marks for definition 2 marks for difference	4				
	ii.	Write the algorithm and draw the flow chart to find factorial of a given number. 3 marks for algorithm 3 marks for flow chart	6				
	OR	iii.	Write the algorithm and draw the flow chart to print all odd numbers upto100. 3 marks for algorithm 3 marks for flow chart	6			
	Q.3	i.	What do mean by Character set? 2 marks for definition	2			
		ii.	Explain constant, variable and keyword in detail. 3 marks for constant 3 marks for variable 2 marks for keyword	8			
	OR	iii.	What do mean by scope and lifetime of a variable? Explain storage classes (auto, static, register and extern) using suitable example. 2 marks for scope and lifetime 3 marks for definition 3 marks for example	8			
	Q.4	i.	What is the use of “sizeof” in C? 2 marks for use	2			
		ii.	Compare break and continue statements using example. 1 marks for definition 2 marks for example	3			
		iii.	What are the various loop constructs available in C. Distinguish between while and do- while loops. 3 marks for definition of three loops 2 marks for comparison	5			
	OR	iv.	Explain the following using general syntax and example. (a) if (b) if-else (c) goto 1 marks for if 2 marks for if-else 2 marks for goto	5			

- Q.5 i. What is an array? Explain the features of an array and their uses. **4**
2 marks for definition
2 marks for features and use
- ii. Write a program to multiply two 3*3 matrix. **6**
3 marks for I/O and 3 marks for logic
- OR iii. What do you understand by strings? How do you declare a string? Explain following function strlen(), strcpy(), strcat(), strcmp(). **6**
2 marks for definition and declaration
4 marks for function
- Q.6 Attempt any two:
- i. What is a pre-processor? What are the advantages of preprocessor? Explain two forms of #include directive. **5**
2 marks for definition
2 marks for advantage
1 marks for two forms of #include directive
- ii. What is union? Explain its advantage with respect to structure using suitable example. **5**
2 marks for definition
3 marks for advantage and example
- iii. Write a C Program To Store Student Information Like (Name, Roll & Marks) Using Structure. **5**
2 marks for declaration
3 marks for accessing elements