

# **Solapur University, Solapur**

## **Semester Pattern Syllabus of B.Sc.-I**

### **Computer Science**

**w.e.f. June-2010**

#### **Semester - I**

<b>Paper Code</b>	<b>Paper Name</b>	<b>Theory / Practical</b>	<b>Marks</b>
I	Computer Fundamentals – I	Theory	50
II	Programming using 'C' – I	Theory	50
LAB-I	Laboratory Course in Computer Science	Practical	---

#### **Semester – II**

<b>Paper Code</b>	<b>Paper Name</b>	<b>Theory / Practical</b>	<b>Marks</b>
III	Computer Fundamentals – II	Theory	50
IV	Programming using 'C' – II	Theory	50
LAB-I	Laboratory Course in Computer Science	Practical	50

- **LAB-I** : Laboratory Course in Computer Science is based on papers I, II, III and IV.

## **B.Sc. – I (Computer Science) Semester - I**

### **Paper – I : COMPUTER FUNDAMENTALS-I**

#### **Chapter 1:-** Introduction to computer -

**[6]**

Definition of computer, characteristics, limitations, concepts of h/w and s/w, capabilities of computers, evaluation , generation , classification based on size and purpose, applications of computers in various fields, computer language – high level, low level, assembly level , compiler, interpreter.

#### **Chapter 2:-** Structure of computer:-

**[6]**

Block diagram, Input Unit – ALU, Memory Unit, Control Unit, Introduction to motherboard, SMPS, Expansion Slots, Serial and Parallel ports

#### **Chapter 3:-** Computer codes and Number System:-

**[10]**

BCD, EBCDIC, ASCII, Gray Code, Excess 3- code, Bit, Byte, Word.

Number System – Binary, Octal, Decimal, Hexadecimal , Conversion of Number System, Binary Arithmetic – addition, subtraction, multiplication, division, ones and two's compliment.

#### **Chapter 4:-** Input and Output Devices:-

**[8]**

Input devices: - Keyboard, Mouse, Light pen, Joystick, Touch screen, Digitizer, Scanner, MICR, OMR, Barcode reader.

Out put devices: - VDU, Printers – Dot-matrix, Inkjet, Laser, Line, Plotters

#### **Chapter 5:-** Concept of Memory

**[6]**

Primary Memory – RAM, ROM, EPROM, PROM.

Secondary Storage devices: - Magnetic disk, Magnetic tape, Floppy disk, CD ROM

#### **Chapter 6:-** Operating System

**[8]**

Definition and Functions of O.S.

Disk Operating System (DOS), Dos internal and external commands, Batch files commands, concept of directory and file,

Types of O.S. –Single user, Multi-user, Graphical User.

#### **Reference Books:-**

- 1) Computer Today --Basandra
- 2) Fundamental of computers --V. Raja Raman.
- 3) Computer Fundaments --P.K. Sinha.

## **Paper – II : PROGRAMMING USING ‘C’ - I**

### **Chapter –1. Programming Methodology**

**[09]**

- Step involving in problem solving.
- Problem definition
- Algorithm, Characteristics, Notation of Algorithm
- Flowcharts- Definition, Symbol, features
- Running and debugging the program.

### **Chapter-2. Introduction to ‘C’**

**[5]**

- History
- Character set and keywords
- Structure of ‘C’ programming
- Constant and its type
- Variable and its type(Data types)
- Operators- Arithmetic, logical, relational, bitwise, increment, decrement, Conditional

### **Chapter-3. Control Statements**

**[15]**

- Conditional control statements- if, if else, nested if, switch
- Looping – for statements, nested for, while, do-while statements
- Unconditional control statements- break, continue, goto

### **Chapter-4. Arrays**

**[15]**

- Array definition and declaration
- Single and multidimensional array
- String functions

### **Reference Books:**

- 1) Let us C- Y. C. Kanetkar
- 2) ‘C’ programming- Dennis Ritchie
- 3) Programming in C- Gottfried
- 4) Programming in ANSI-C - Balgurusamy

**B.Sc. – I (Computer Science) Semester - II**

**Paper – III : Computer Fundamentals – II**

**Chapter 1:- Windows Operating System [8]**

Features of Windows O.S., GUI

Modulus of Windows – Windows Explorer, Program manager, Control panel, Printer Manger.

Elements of windows – Desktop, Application, icons etc.

Windows accessories – Paintbrush, Notepad.

**Chapter 2:- Process Management [4]**

Multiprogramming, Multitasking, Multiprocessing, Time sharing

**Chapter 3:- Networking Environment [4]**

Definition of networking, Types of networking – LAN, MAN, WAN

Concept of Internet, Uses and benefits

**Chapter 4 :- Editors and Word Processors [15]**

Definition of Word Processor, Detail study of features of MS- WORD and MS – EXCEL.

**Chapter 5:- We b Technology [15]**

Evaluation of internet, HTML, History, Structure of HTML, Tags, Formatting, Text, Adding images, Hyper link, Image Map, Tables, Frames, Sending Email, CSS, JAVASCRIPT, DHTML, VBscript.

**Reference Books:-**

- 1) Computer Today --Basundra
- 2) Fundamental of computers --V. Raja Raman.
- 3) Computer Fundaments --P.K. Sinha.
- 4) HTML, DHTML, JAVA Script, CGI, Perl – Ivan Bayross

## **Paper – IV : Programming Using ‘C’ - II**

### **Chapter-1. Functions [15]**

- Definition, declaration, prototype of function
- Local and global variable
- User defined function
- Storage classes
- Preprocessor

### **Chapter-2. Pointers [10]**

- Definition and declaration
- Operation on pointer
- Pointer initialization
- Pointer and function
- Pointer and array
- Pointer of pointer
- Call by value and Call by reference
- Dynamic memory allocation

### **Chapter-3. Structures and Union [10]**

- Definition and declaration
- Array of structures
- Passing structure to function
- Pointer to structure
- Nested structure, self referential structure
- Size of and type def

### **Chapter-4. File Handling [10]**

- Standard input- get char (), getch(), getche ().
- Standard output- put char (), putch (), putche ()
- Formatted input- scanf (), sscanf (), fsclose ()
- File opening mode- open, modify, write, append
- Text and binary mode.

### **Reference Books:**

- 1) Let us C- Y. C. Kanetkar
- 2) ‘C’ programming- Dennis Ritchie
- 3) Programming in C- Gottfried
- 4) Programming in ANSI-C – Balgurusamy

## **LAB - I : Laboratory course in Computer Science**

### **Laboratory course on paper - I and III –**

- 1) Demonstration of peripherals
- 2) Linking of various peripherals
- 3) Operation of all keys of keyboard
- 4) DOS – external and internal commands, batch files commands
- 5) Windows Operating System –  
Windows explorer, program manger, control panel, print manager,  
Creating folders, files, icons, shortcuts
- 6) MS – WORD – Creating new documents, typing, deleting, selecting text,  
undo, Redo, formatting text – auto format, formatting characters, drop caps,  
Paragraphs, line spacing, margins, page setup, headers and footers  
Writer's tools – spelling checker, auto format, auto correct, find and replace  
Mail merge – Data source, Main document, creating mail merge document.
- 7) MS – EXCEL - Creating worksheet, Graphs, resizing graphs, formulas, if  
Statement, types of functions
- 8) Internet – creating e – mail accounts, browsing.

### **Laboratory course on paper – II and IV**

- 1) Write a Program to convert the Temperature in centigrade degree to the  
Fahrenheit degree.
- 2) check whether given number is even or odd.
- 3) Write a program to find out First Fifty Prime numbers.
- 4) Write a program to find GCD & LCM of given number.
- 5) Write a program to convert given Binary number into its Octal / Decimal,  
Hexadecimal Equivalent.
- 6) Write a program to display Fibonacci series.
- 7) Write a Recursive function to find out the Factorial of Given Number.
- 8) Write a program to remove blank lines from a file.
- 9) Write a program to count the no. of words in a given text file.
- 10) Write a program to reverse the given number.
- 11) write a program to calculate Matrix Addition, Multiplication using Functions as  
well as without Functioning.
- 12) Write a program to find given string is Palindrome or not using function.
- 13) Write a program that accepts the Roll No, Name, Marks obtained in three tests  
of 'N' students & display the total and Average in tabular format.
- 14) Write a program to accepts two alphabets and pass them to the Function via  
Pointers Which checks for type of these alphabets. If both alphabets are Vowels  
then function Should return to the calling function, their previous alphabets. If  
both alphabets are Constant then function should return their successor  
alphabets.
- 15) Write a program to add two Matrices; Use two Dimensional array as Pointer &  
Dynamic Memory allocation.
- 16) Write a program to input 10 names each of the length at least 8 characters sort  
them in a alphabetical order.

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# **Solapur University, Solapur**

## **Nature of Question Paper For Semester Pattern**

- **Faculty of Science**  
(w.e.f. June 2010)

**Time :- 2 hrs.**

**Total Marks-50**

**Q. No.1) Multiple choice questions. (10)**

- 1) -----  
a) b) c) d)  
2)  
3)  
4)  
5)  
6)  
7)  
8)  
9)  
10)

**Q.No.2) Answer any Five of the following (10)**

- i)  
ii)  
iii)  
iv)  
v)  
vi)

**Q.No.3) A) Answer any Two of the following (06)**

- i)  
ii)  
iii)

**B) Write the Answer/Solve/Problem/Note (04)**

**Q.No.4) Answer any Two of the following (10)**

- i)  
ii)  
iii)

**Q.No.5) Answer any Two of the following (10)**

- i)  
ii)  
iii)



## 1. Structure of the courses :-

- A) Each paper of every subject for Arts, Social Sciences & Commerce Faculty shall be of 50 marks as resolved by the respective faculties and Academic Council.
- B) For Science Faculty subjects each paper shall be of 50 marks and practical for every subject shall be of 50 Marks as resolved in the faculty and Academic Council.
- C) For B. Pharmacy also the paper shall be of 50 marks for University examination. Internal marks will be given in the form of grades.
- D) For courses which were in semester pattern will have their original distribution already of marks for each paper.
- E) For the faculties of Education, Law, Engineering the course structure shall be as per the resolutions of the respective faculties and Academic Council.

## 2. Nature of question paper:

### A) Nature of questions.

“20% Marks - objectives question” **(One mark each and multiple choice questions)**

“40% Marks - Short notes / Short answer type questions / Short Mathematical type questions/ Problems. **(2 to 5 Marks each)**

“40% Marks - Descriptive type questions / Long Mathematical type questions / Problems. **(6 to 10 Marks each)**

- B) Objective type question will be of multiple choice (MCQ) with four alternatives. This answer book will be collected in first 15 minutes for 10 marks and in first 30 minutes for 20 marks. Each objective question will carry one mark **each**.
  - C) Questions on any topic may be set in any type of question. All questions should be set in such a way that there should be permutation and combination of questions on all topics from the syllabus. As far as possible it should cover entire syllabus.
  - D) There will be only five questions in the question paper. All questions will be compulsory. There will be internal option **(30%)** and not overall option. **for questions 2 to 5.**
- 3. Practical Examination for B. Sc. I. will be conducted at the end of second semester.
  - 4. Examination fees for semester Examination will be decided in the Board of Examinations.

The structures of all courses in all Faculties were approved and placed before the Academic Council. After considered deliberations and discussion it was decided not to convene a meeting of the Academic Council for the same matter as there is no deviation from any decision taken by Faculties and Academic Council. Nature of Question Paper approved by Hon. Vice Chancellor on behalf of the Academic Council.