

**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

B.Voc. (CYBER SECURITY)

**First Year
(FIRST AND SECOND SEMESTER)
FOR
2019-20, 2020-21 and 2021-22 Sessions**

**PUNJABI UNIVERSITY
PATIALA**

**ORDINANCES
AND OUTLINES OF TESTS,
COURSES OF READING**

FOR

BACHELOR OF VOCATION (CYBER SECURITY)

FOR

2019-20, 2020-21 & 2021-22 Sessions

ORDINANCES

(FOR B.VOC. UNDER THE +3 SCHEME)

Notwithstanding the integrated nature of a course spread over more than one academic year, the ordinances in force at the time a student joins a course shall hold good only for the examination held during or at the end of the academic year. Nothing in these Ordinances shall be deemed to debar the University from amending the ordinances subsequently and the amended ordinances, if any, shall apply to all the students whether old or new.

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as part of college/university education, leading to Bachelor of Vocation (B.Voc.) Degree with multiple exits such as Diploma/Advanced Diploma under the NSQF. The B.Voc. programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles and their NOSs alongwith broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participation in accelerating India's economy by gaining appropriate employment, becoming entrepreneurs and creating appropriate knowledge.

- 1 B.Voc. is a Degree with multiple exits such as Certificate, Diploma, Advanced Diploma and Degree under NSQF comprising three parts spread over three years. The course of study of B.Voc. shall be divided in six semesters and university examination will be held at the end of every semester in the months of November/December (for semester I, III & V) and May/June (for semester II, IV & VI) or as fixed by the Academic Council.
- 2 A candidate will be awarded Certificate in Cyber Security after passing the first semester, Diploma in Cyber Security after completion and passing the first year, Advanced Diploma in Cyber Security after passing the second year and B.VOC in Cyber Security after the passing the third year and candidate will be eligible to rejoin the next level at any time without any minimum and Allowed limit duration.
- 3 The outlines of tests and syllabi shall be such as prescribed by the Academic Council from time to time.
- 4 A candidate will be eligible to join 1st semester of B.VOC.(Cyber Security) course, if he/she has passed +2 examination in any stream of Punjab School Education Board, or any other examination recognized as equivalent thereto without reappear.
- 5 Semester examination will be open to regular candidates who have been on the rolls of a college affiliated to this University and meet the attendance and other requirements as prescribed in the Ordinances No.7

- 6 Subject to fulfillment of requirement of House examination, the attendance requirements and these ordinances there will be no condition of passing papers for promotion from odd semester to even semester in an Academic Session.

To qualify for admission to 2nd year of the Course, the candidate must have passed 50% of total papers of the two semesters of the 1st year. Similarly, to qualify for admission to 3rd year of the course, the candidate should have passed 50% of total papers of four semesters of the earlier two years.

A candidate placed under reappear in any paper, will be allowed two chances to clear the reappear, which should be availed within consecutive two years/chances i.e. to pass in a paper the candidate will have a total of three chances, one as regular student and two as reappear candidate.

The examination of reappear papers of odd semester will be held with regular

examination of the odd semester and reappear examination of the even semester will be held with regular examination of even semester. But if a candidate is placed under reappear in the last semester of the course, he will be provided chance to pass the reappear with the examination of the next semester, provided his reappear of lower semester does not go beyond next semester.

- 7 Attendance Requirements

Every candidate will be required to attend a minimum of 75% lectures delivered to that class in each paper as well as 75% of the laboratory work, seminars etc. separately. Provided that a deficiency in attendances may be condoned for special reasons, as per the relevant ordinances on the subject.

- 8 To be eligible to appear in the semester examination a candidate must have obtained in the house examination at least 25% marks in each paper; 35% marks in the aggregate of all subjects of the semester. The Principal at his discretion may allow a special test to a candidate who could not appear in the House examination owing to unavoidable reasons or fails to secure the minimum marks as prescribed above.

- 9 Late College Students: A candidate, who has completed the prescribed course of instructions for a semester but has not appeared in the examination or having appeared, has failed in the examination, may appear as a late college student within the prescribed period.

- 10 Amount of examination fee to be paid by a candidate for each semester shall be as fixed by the University from time to time.

- 11 Applications for admission to the examination shall be made on the prescribed form attested by the competent authority as per University rules. The last date by which admission forms and fees must reach the Registrar shall be as follows:

Semester	Without late fee	With Rs. 800/- Late fee	With Rs. 1200/- Late fee	With Rs. 5000/- Late fee	With Rs. 10,000/- Late fee
December/January	26 th September	15 th October	21 st October	31 st October	10 th November
April/May	28 th February	15 th March	21 st March	31 st March	15 th April

- 12 University medal will be awarded to a candidate who secured first position in the University on the basis of the marks of all the six semesters taken together. The general rules and conditions of the University for the award of medal/prizes etc. will be applicable in the award of University medal to the topper of this examination.
- 13 The medium of instructions and examination will be English as well as punjabi.
- 14 The minimum number of marks required to pass the examination in each Part shall be 35% in each subject, provided that in subject with practical the percentage shall be required separately in written and practical/lab work. The candidate shall also be entitled to grace marks as admissible under the ordinances relating to the

GENERAL GRACE MARKS.

- 15 The successful candidates shall be classified on the basis of aggregate marks secured in all the six semesters of B.VOC taken together as under:
- 60% or more in the First division.
 - 50% or more but less than 60% in the Second division.
 - Below 50% in the Third division.
- 16 The program has Multiple Exit and Entry Points
- If a Student wants to Exit After Completion of First semester he/she will Awarded with certificate in Cyber Security and it is equivalent to NSQF Level 4 .
 - If a Student wants to Exit After Completion of First year he/she will Awarded with Diploma in Cyber Security and it is equivalent to NSQF Level 5 .
 - If a Student wants to Exit after Completion of Second year he/she will Awarded with Advance Diploma in Cyber Security and it is equivalent to NSQF Level 6.

- (c) After Completion of Third year they will Awarded with B.Voc Degree in Cyber Security and it is equivalent to NSQF Level 7.
- (d) The B.VOC (Cyber Security) Degree will be count as equivalent to Bachelor degree Cyber Security, Computer Science, Computer Application or Software Development for admission in all Master degrees.

The Lecture Hours for each of the years are as follows:

	SKILL COMPONENT HOURS	GENERAL EDUCATION HOURS	NORMAL CALENDAR DURATION	NSQF LEVEL	EXIT POINT /AWARDS
Year 1	540	360	Two Semesters	Level 5	Diploma in Cyber Security
Year 2	540	360	Two Semesters	Level 6	Advance Diploma in Cyber Security
Year 3	540	360	Two Semesters	Level 7	B.Voc Degree
Total	1620	1080			

- a) For internship/field work, the lecture hours weight age for equivalent hours shall be 50% of that for lectures/workshops
- b) For self-learning, based on e-content or otherwise, the lecture hours for equivalent hours of study should be 50% or less of that for lectures/workshops.

B. VOC. (CYBER SECURITY) First Year(1st Semester)
(2019-20, 2020-21 and 2021-22 Sessions)

Code	Title of Paper	Component	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
B.VCS-111	Communication Skills	General	4.5	60	40	100	3
B.VCS-112	Fundamentals of Computer and Cyber Security	General	4.5	60	40	100	3
B.VCS-113	Computer Programming using C	Skill	4.5	60	40	100	3
B.VCS-114	Web Designing using HTML and DHTML	Skill	4.5	60	40	100	3
B.VCS-115	Project – I	Skill	4.0	50	50	100	3
B.VCS-116	Software Lab – I (Based on B.VCS-113 & B.VCS-114)	Skill	4.0	50	50	100	3
B.VCS-117	Language Lab-I	General	4.0	50	50	100	3
Total			30	390	310	700	

1. The breakup of marks for the practical will be as under:
 - i. Internal Assessment 50 Marks
 - ii. Viva Voce (External Evaluation) 20 Marks
 - iii. Lab Record Program Development and Execution(External Evaluation) 30 Marks

2. The breakup of marks for the internal assessment for theory Subjects will be as under:
 - i. Average of Both Mid Semester Tests / Internal Examinations 24 Marks
 - ii. Attendance 8 Marks
 - iii. Written Assignment/Project Work etc. 8 Marks

**OUTLINE OF PAPERS AND TESTS
FOR
B. VOC. (CYBER SECURITY) First Year (2nd Semester)**

Code	Title of Paper	Component	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
B.VCS-121	Functional Punjabi / Elementary Punjabi*	General	4.5	60	40	100	3
B.VCS-122	Fundamentals of DBMS	General	4.5	60	40	100	3
B.VCS-123	Fundamentals of Cyber Security	Skill	4.5	60	40	100	3
B.VCS-124	Programming Using C++	Skill	4.5	60	40	100	3
B.VCS-125	Software Lab-II	Skill	4.0	50	50	100	3
B.VCS-126	Software Lab – III	Skill	4.0	50	50	100	3
B.VCS-127	Language Lab-II	General	4.0	50	50	100	3
B.VCS-128	Drug Abuse : Problem, Management and Prevention**	(only qualifying Paper)		70	30	100	3

(2019-20, 2020-21 and 2021-22 Sessions)

1. The breakup of marks for the practical will be as under:
 - i. Internal Assessment 50 Marks
 - ii. Viva Voce (External Evaluation) 20 Marks
 - iii. Lab Record Program Development and Execution(External Evaluation) 30 Marks
2. The breakup of marks for the internal assessment for theory Subjects will be as under:
 - i. Average of Both Mid Semester Tests / Internal Examinations 24 Marks
 - ii. Attendance 8 Marks
 - iii. Written Assignment/Project Work etc. 8 Marks

* Only those students who have not studied Punjabi up to matriculation can opt for Elementary Punjabi. The code for the paper is same.

** B. VCS-128: Drug Abuse : Problem, Management and Prevention is a compulsory qualifying paper as per university guidelines, the marks for this paper are not counted for the total marks for the degree.

B.VCS-111 COMMUNICATION SKILLS

Max. Marks : 60 Marks

Min. Pass Marks : 35%

Max. Time : 3hrs

Lectures to be delivered: 55-65

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Communication: Meaning, Importance, and Process, Objectives of Communication, Effective Communication, Means/ Media and Types of Communication, Channels of Communication, Barriers to Communication, Voice Training, Importance of Feedback. Interview, Report Writing, Speeches and Presentations, Documentation, Preparation of Extempore speech, Group Discussion, Debates, Declamation; Stage Confidence.

Business Correspondence: Definition, Importance Business letters: Essential features, Parts and Layout, Types: Purchase order letter, Enquiry Letter, Quotation Letter, Acceptance Letter, Refusal Letter, Follow Up Letter and Cancellation of order letter.

SECTION B

Personality Development: Types of personality, Dynamics of Personality, Personality Traits, Influences on Personality, Personality Analysis through body language and Individual habits, Physical Aspects of personality, Emotional Stability, Memory Training, Mind and mental development, Mental Blocks, Manners and Art of Living.

Reference Books:

1. Vandan R.Singh "The Written Word " Publisher Oxford University Press (4 July 2006)
2. M.K. Sehgal , Vandana Khetarpal "Business Communication" Publisher Excel Books (December 1, 2007) ...
3. Duttetal " A Course in Communication Skills " Publisher Company Ltd., 2001.
4. Subhash Jagota "Succeeding through Communication" Publisher: Excel Books (1 December 2007);
5. Prof. Achhru Singh & Dr. Dharminder Singh Ubha "Personality Development and Soft Skills" Publisher

B.VCS—112 FUNDAMENTALS OF COMPUTER AND CYBER SECURITY

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to Computer: Block diagram of a Computer, Characteristics of computers and Generations of computers.

Understanding Basics of Cyber Security: Overview of Cyber Security, Internet Governance – Challenges and Constraints, Cyber Threats:- Cyber Warfare-Cyber, Need for a Comprehensive Cyber Security Policy, Need for a Nodal Authority, Need for an International convention on Cyberspace

Viruses: Types of Viruses, Advantages and Disadvantages.

Computer Security: Introduction of Computer Security, History of Computer Security, necessity of Computer Security, components of Computer, Computer Security Threats, Computer Security Controls.

SECTION B

Cyber Crime: Introduction to IT laws & Cyber Crimes – Internet, Hacking, Cracking, Viruses, Virus Attacks, Pornography, Software Piracy, Intellectual property, Legal System of Information Technology, Social Engineering, Mail Bombs, Bug Exploits, and Cyber Security etc. Tracking, IP Tracking, E-Mail Recovery, Encryption and Decryption methods, Search and Seizure of Computers, Recovering deleted evidences, Password Cracking.

Security Policies and Management:- Security Policy and Design, Designing Security Procedures, Security Standards.

Security Models:-Biba Model, Chinese Wall, Bell La Pedula Model.

Reference Books:

- 1 P.K. Sinha and P. Sinha, "Foundations of Computing", BPB.
- 2 Sunit Belapure, Nina Godbole "Cyber Security", Willey.
- 3 Surya Prakash Tripathi , Ritendra Goel , Praveen Kumar Shukla "Introduction to Information Security and Cyber Laws", Kindle Edition.
- 4 Mayank Bhushan, "Fundamentals of Cyber Security", BPS Publications.

B.VCS—113 COMPUTER PROGRAMMING USING "C"

Max Marks: 60

Min Pass Marks: 35%

Max.Time: 3 Hrs.

Lectures to be delivered: 55-65

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Fundamental of C programming: Overview, Basic Structure of C Program, Program Debugging, Compilation and Execution, Rules of Character set, Identifiers and keywords, Constants, Variables, Data types.

Header Files: stdio.h, math.h, string.h, process.h etc.

I/O functions: Formatted and Unformatted console I/O functions.

Operators: Need, Types, Precedence and Associativity. Type conversion (Implicit and Explicit conversion).

Control Structure: Decision making statements (if, if else, switch), Loop control statements (for, while and do-while), jumping statements (break, continue, goto), nested control structures.

Arrays: One dimensional and multi dimensional arrays, Array declaration, initialization, reading values into an array, displaying array contents.

Strings: input/output of strings, string handling functions (strlen, strcpy, strcmp, strcat & strrev).

SECTION B

Functions: Uses of functions, various categories of functions, Library functions and user defined functions, prototype, definition and call, formal and actual arguments, local and global variables, methods of parameter passing to functions, recursion.

Storage Classes: automatic, external, static and register variables.

Structures and unions: using structures and unions, comparison of structure with arrays and union.

Pointers: pointer data type, pointer declaration, initialization, accessing values using pointers, pointers and arrays.

Reference Books:

1. E. Balagurusamy, Programming in C, Tata McGraw-Hill.
2. Let Us C, Yashvant P Kanetkar, BPB.

3. Kernighan and Ritchie, The C Programming Language, PHI.
4. Byron Gottfried, Programming in C, Tata McGraw-Hill.
5. Kamathane, Programming in C, Oxford University Press.

B.VCS-114 WEB DESIGNING USING HTML AND DHTML

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to HTML: Basic HTML concepts, an overview of HTML markup.

Introduction to good Web design, the process of Web publishing, implementation, the phases of Web site development, HTML's role in the Web, and issues facing HTML and the Web. **HTML overview:** the structure of HTML documents; document types, the <HTML> element; the <HEAD> element, the <BODY> element.

Links and Addressing: Linking basics, Types of URLs; linking in HTML, anchor attributes, images and anchors, image maps; semantic linking with the <LINK> element, meta-information.

HTML and Images: The role of images on the Web, image preliminaries; image downloading issues, obtaining images, HTML image basics, images as buttons; and image maps.

Introduction to Layout: Backgrounds, Colors, and Text, Design requirements, HTML approach to Web design, fonts, colors in HTML, document-wide color attributes for <BODY>, and background images. Introduction to lists, tables, frames.

SECTION B

Basic Interactivity and HTML: Forms preliminaries; the <FORM> elements, form controls.

Dynamic HTML (DHTML): Dynamic HTML and document object model, HTML and scripting access, rollover buttons, moving objects with DHTML, and ramifications of DHTML.

Style Sheets: style sheets basics, style sheet example, style sheet properties, positioning with style sheets.

Client Side Scripting: Java script: Introduction, documents, forms, statements, functions, objects, Event and event handling, Browsers and the DOM, J Query: Syntax, Selectors, Events and AJAX methods.

Reference Books:

1. Deitel, Deitel and Nieto: Internet & WWW. How to program, Pearson Education.
2. Thomas A. Powell, HTML: The Complete Reference, Osborne/McGraw-Hill
3. E Stephen Mack, Janan Platt:HTML 4.0 , No Experience Required, BPB Publications.

4. Sybex, "HTML Complete" by BPB Publications, 2001.
5. Bayross, Web Enabled Commercial Applications Development Using HTML, DHTML, Java Script, Perl CGI, BPB Publication
6. Scott Mitchell, Designing Active Server Pages, O Relly, 2000.

B.VCS-115 PROJECT– I (ONE MONTH TRAINING BASED ON MS-OFFICE)

Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Note: Student Have to Submit Project Report on MS- Office

MS-word: Design, create and modify a range of business documents, Displaying Different Views of a Document, Creating and Saving a Document, Selecting, Modifying, Finding and Replace Text, Align Text Using Tabs, Display Text as List Items. Apply Borders and Shading, Preview a document, and adjust its margins and orientation, Insert & Format a Table, Convert Text to a Table, Check Spelling and Grammar, Use the Thesaurus, Print with default or custom settings, Managing Lists – Sort, Renumber, Customize a List, Apply a Page Border and Colour, Sorting Table Data, Control Cell Layout, Perform Calculations in a Table, Creating Customized Formats with Styles and Themes. Create or Modify a Text Style, Create a Custom List or Table Style. Modifying Pictures & Picture Appearance Settings, Wrap Text around a Picture, Insert and Format Screenshots in a Document, Add Word-Art , Use the Mail Merge Feature including Envelopes and Labels.

MS-Excel: Construct a spreadsheet and populating Cell Data, Formatting Cells - Search Worksheet Data, Changing Fonts, Modify Rows and Columns, Managing Worksheets and Workbooks, Applying Formulas and Functions, Inserting Currency Symbols, Merging cells, Spell Check a Worksheet, Add Borders and Color to Cells, Printing options to output a chart, Modify the Layout of a Paragraph – Tabs, Headers, Footers, Apply Styles & Manage Formatting, Document Templates, Insert contents, page and section breaks, Apply Character Formatting.

Clip Art , Symbols, Illustrations, Set Page Breaks, Page Layout Options, Manage Workbook Views, Apply Cell and Range Names, Auto Sum in Cells, Calculate Data Across Worksheets, Sort or Filter Worksheet or Table Data, Create, Modify and Format Charts, Create, modify and format spreadsheets using the full range of the software formatting, features including conditional formatting for example Hide /unhide/freeze rows and columns.

MS-PowerPoint: Salient features of Power Point, Starting ,Saving and quitting presentation, various components and elements of PowerPoint Package. Insert Clip Art and Graphs. Adding Multimedia Effects to the slide. Formatting and Editing Presentations. Adding Animation and Transition effects to the presentations.

Reference Books

1. Torben Lage Frandsen "Microsoft Office Word"
2. Stephen, "Word 2010 Introduction" Kalyani Publisher

B.VCS -116 SOFTWARE LAB – I (Based on B. VSD-113 and B.VCS-114)

Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BVSD-113 and BVSD-114.

Students are required to develop the following programs with internal documentation:

- 1 Assignments on Data types, Operators, Control Structure (if else, while, for, Do-while), jumping statements in C.**
 - i. Write a program to print the size of all the data types supported by C.
 - ii. Write a program to check whether the given number is a even number or not.
 - iii. Write a program to accept three numbers and find the largest among them.
 - iv. Write a program to count the different vowels in a line of text using switch.
 - v. Write a program to accept two numbers and perform various arithmetic operations (+, -, *, /) based on the symbol entered.
 - vi. Write a program to find factorial of a number.
 - vii. Write a program to print all prime numbers between any 2 given limits.
 - viii. Write a program to print all the Armstrong numbers between any 2 given limits.
 - ix. Write a program to demonstrate the use of break and continue statements.
- 2 Assignment on Arrays(one and two dimensional) and strings (string handling functions)**
 - i. Write a program to find largest element in an array.
 - ii. Write a program to search an element in an array.
 - iii. Write a program to find sum and average of numbers stored in an array.
 - iv. Write a program to check whether a string is a Palindrome.
 - v. Write a program to perform matrix addition.
 - vi. Write a program to perform matrix multiplication.
 - vii. Write a program to demonstrate string handling functions.
- 3 Assignment on Pointers and Array of Pointers**
 - i. Write a function to swap two numbers using pointers.
 - ii. Write a program to access an array of integers using pointers.
- 4 Assignment on Functions , Recursion and Storage Classes**
 - i. Write a program to demonstrate the methods of argument passing.
 - ii. Write a program to find the roots of a quadratic equation using function.
 - iii. Write a recursive program to find the factorial of a number.
 - iv. Write a recursive program to find the nth Fibonacci number.
 - v. Write a program to show the significance of different storage classes.
- 5 Assignment on Structures and Unions**
 - i. Write a program to create an employee structure and display the same.
 - ii. Write a program to create a student database storing the roll no, name, class etc and sort by name.

B.VCS-117 LANGUAGE LAB-1 (Based on B.VCS 111)

Max Marks: 50

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Practical Units: 50 Marks

1. Reading Skills (15 Marks)

- i. Comprehension of various passages with special emphasis on framing questions and answers, word-meaning.
- ii. Newspaper reading

2. Speaking Skills (15 Marks)

- i. Speech Organs, Basic phonetic symbols and correct pronunciation.
- ii. Teaching conversations skills with special emphasis on grammar and vocabulary through the use of audio-visual aids

3. Listening and Writing Skills (10 Marks)

- i. The students should be made to view English movies with the aim of comprehension. The students should be able to answer the questions at the end of each session.
- ii. Creative writing

4. Personality Development (10 Marks)

B.VCS-121- A: FUNCTIONAL PUNJABI

ਪੀਰੀਅਡ 6 ਪ੍ਰਤੀ ਹਫ਼ਤਾ

ਕੁੱਲ ਅੰਕ: 100

ਲਿਖਤੀ ਪ੍ਰੀਖਿਆ: 60

ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ: 40

ਸਿਲੇਬਸ ਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

1. ਪੰਜਾਬੀ ਦੀ ਪਾਠ ਪੁਸਤਕ, ਸੰਪਾ. ਡਾ. ਬਲਦੇਵ ਸਿੰਘ ਚੀਮਾ,
ਅੰਕ-ਵੰਡ ਤੇ ਪੇਪਰ-ਸੈਂਟਰ ਲਈ ਹਦਾਇਤਾਂ

1. ਭਾਗ ਪਹਿਲਾ ਵਿੱਚੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪਾਏ ਜਾਣ ਅਤੇ ਦੋ ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇ। ਹਰ ਇੱਕ ਪ੍ਰਸ਼ਨ ਨੂੰ (9) ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। 2x9=18

(ਕਿਸੇ ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ ਅਤੇ ਪ੍ਰਸੰਗ-ਸਹਿਤ ਵਿਆਖਿਆ ਬਾਰੇ ਹੀ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ।)

2. ਭਾਗ ਦੂਜਾ ਵਿੱਚੋਂ ਚਾਰ (4) ਪ੍ਰਸ਼ਨ ਪਾਏ ਜਾਣ ਅਤੇ ਦੋ (2) ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇ। ਹਰ ਇੱਕ ਪ੍ਰਸ਼ਨ ਨੂੰ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। 2x9=18

(ਪੁਸਤਕ ਦੇ ਭਾਗ ਦੂਜਾ ਅਤੇ ਤੀਜਾ ਵਿੱਚੋਂ ਕੁੱਲ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ।)

3. ਬਾਰਾਂ (12) ਛੋਟੇ ਪ੍ਰਸ਼ਨ ਪਾਏ ਜਾਣ। ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ (2) ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

$$12 \times 2 = 24$$

(ਛੋਟੇ ਪ੍ਰਸ਼ਨਾਂ ਲਈ ਪਾਠ ਪੁਸਤਕ ਵਿਚਲੇ ਸਾਰੇ ਭਾਗਾਂ ਨੂੰ ਆਧਾਰ ਬਣਾਇਆ ਜਾਵੇ)

ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ

1. ਰਿਪੋਰਟ / ਪ੍ਰੋਜੈਕਟ ਦੇ ਆਧਾਰ ਉੱਤੇ।

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2. ਅੰਦਰੂਨੀ ਪ੍ਰੀਖਿਆ (ਦੇਵੇਂ ਪ੍ਰੀਖਿਆਵਾਂ ਦੀ ਔਸਤ ਦੇ ਆਧਾਰ ਉੱਤੇ)

ਅੰਕ

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3. ਕਲਾਸ ਵਿੱਚ ਹਾਜ਼ਰੀ

ਅੰਕ 8

B.VCS- 121-B ਪੰਜਾਬੀ ਲਾਜ਼ਮੀ (ਮੁੱਢਲਾ ਗਿਆਨ) ਭਾਗ-ਪਹਿਲਾ

ਕੁੱਲ ਅੰਕ: 100 (ਪਾਸ ਅੰਕ:35)

ਬਾਹਰੀ ਪਰੀਖਿਆ: 60 ਅੰਕ

ਅੰਦਰੂਨੀ ਮੁਲਾਂਕਣ: 40 ਅੰਕ

ਸਮਾਂ: 3 ਘੰਟੇ

ਭਾਗ - ਓ

(1) ਗੁਰਮੁਖੀ ਵਰਣਮਾਲਾ ਤੇ ਲੇਖਣ-ਪ੍ਰਬੰਧ

(ੳ) ਅੱਖਰ ਸਿੱਖਿਆ: ਤਰਤੀਬਵਾਰ ਤੇ ਭੁਲਾਵੇਂ ਅੱਖਰ।

(ਅ) ਅੱਖਰ ਬਣਤਰ: ਅੱਖਰ ਰੂਪ ਤੇ ਲੇਖਣ ਦੇ ਨਿਯਮ।

(2) ਗੁਰਮੁਖੀ ਅੱਖਰ ਤੇ ਪੰਜਾਬੀ ਧੁਨੀਆਂ ਦਾ ਪ੍ਰਬੰਧ

(ੳ) ਸਵਰ ਤੇ ਵਿਅੰਜਨ: ਵਰਗੀਕਰਨ ਦੇ ਸਿਧਾਂਤ ਤੇ ਉਚਾਰਨ।

(ਅ) ਸਵਰ ਸੂਚਕ ਅੱਖਰਾਂ ਤੇ ਧੁਨੀਆਂ ਦੀ ਪਛਾਣ ਤੇ ਵਰਤੋਂ।

(ੲ) ਵਿਅੰਜਨ ਸੂਚਕ ਅੱਖਰਾਂ ਤੇ ਧੁਨੀਆਂ ਦੀ ਪਛਾਣ ਤੇ ਵਰਤੋਂ।

(ਸ) ਲਗਾਂ-ਮਾਤਰਾਂ ਦੀ ਪਛਾਣ ਤੇ ਵਰਤੋਂ।

(ਹ) ਲਗਾਖਰਾਂ ਦੀ ਪਛਾਣ।

ਭਾਗ - ਅ

(1) ਲਿਪੀ ਦੇ ਅੱਖਰਾਂ ਦੀ ਵਰਤੋਂ ਦੇ ਨਿਯਮ।

(ੳ) ਪੂਰੇ ਤੇ ਅੱਧੇ ਅੱਖਰਾਂ ਦੀ ਪਛਾਣ ਤੇ ਵਰਤੋਂ।

(ਅ) ਸਵਰ ਸੂਚਕ ਅੱਖਰਾਂ ਦੀ ਪਛਾਣ ਤੇ ਵਰਤੋਂ।

(ੲ) ਸਵਰ ਵਾਹਕਾਂ ਦੀ ਪਛਾਣ ਤੇ ਵਰਤੋਂ।

(ਸ) ਮਾਤਰਾ ਤੇ ਸਵਰ ਵਾਹਕਾਂ ਦੀ ਸਾਂਝੀ ਵਰਤੋਂ।

(ਹ) ਮਾਤਰਾ ਦੀ ਵਿਅੰਜਨ ਸੂਚਕਾਂ ਨਾਲ ਵਰਤੋਂ।

(2) ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ਨਾਲ ਜਾਣ ਪਛਾਣ

(ੳ) ਗਿਣਤੀ

(ਅ) ਹਫ਼ਤੇ ਦੇ ਦਿਨ

(ੲ) ਮਹੀਨਿਆਂ ਦੇ ਨਾਂ

(ਸ) ਰੰਗਾਂ ਦੇ ਨਾਂ

(ਹ) ਫਲਾਂ-ਸਬਜ਼ੀਆਂ ਦੇ ਨਾਂ

(ਕ) ਪਸ਼ੂ-ਪੰਛੀਆਂ ਦੇ ਨਾਂ

(ਖ) ਪੰਜਾਬੀ ਰਿਸ਼ਤਾ-ਨਾਤਾ ਪ੍ਰਬੰਧ ਦੀ ਸ਼ਬਦਾਵਲੀ

(ਗ) ਘਰੇਲੂ ਵਸਤਾਂ ਦੀ ਸ਼ਬਦਾਵਲੀ

ਭਾਗ - ਏ (ਸਾਰੇ ਸਿਲੇਬਸ ਤੇ ਆਧਾਰਿਤ ਆਬਜੈਕਟਿਵ ਟਾਈਪ ਪ੍ਰਸ਼ਨ।)

ਅੰਕ-ਵੰਡ ਤੇ ਪੇਪਰ ਸੈਂਟਰ ਲਈ ਹਦਾਇਤਾਂ

3. ਭਾਗ ਪਹਿਲਾ ਵਿੱਚੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪਾਏ ਜਾਣ ਅਤੇ ਦੋ ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇ। ਹਰ ਇੱਕ ਪ੍ਰਸ਼ਨ ਨੂੰ (9) ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। $2 \times 9 = 18$
4. (ਭਾਗ ਦੂਜਾ ਵਿੱਚੋਂ ਚਾਰ (4) ਪ੍ਰਸ਼ਨ ਪਾਏ ਜਾਣ ਅਤੇ ਦੋ (2) ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇ। ਹਰ ਇੱਕ ਪ੍ਰਸ਼ਨ ਨੂੰ (9) ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। $2 \times 9 = 18$
5. ਬਾਰਾਂ (12) ਛੋਟੇ ਪ੍ਰਸ਼ਨ ਪਾਏ ਜਾਣ। ਹਰ ਪ੍ਰਸ਼ਨ ਦੋ (2) ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। $12 \times 2 = 24$

ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ

1. ਰਿਪੋਰਟ / ਪ੍ਰੋਜੈਕਟ ਦੇ ਅਧਾਰ ਉੱਤੇ। ਅੰਕ 8
2. ਅੰਦਰੂਨੀ ਪ੍ਰੀਖਿਆ (ਦੋਵੇਂ ਪ੍ਰੀਖਿਆਵਾਂ ਦੀ ਔਸਤ ਦੇ ਅਧਾਰ ਉੱਤੇ) ਅੰਕ
24
3. ਕਲਾਸ ਵਿੱਚ ਹਾਜ਼ਰੀ
ਅੰਕ 8

ਅੰਕ-ਵੰਡ ਤੇ ਪੇਪਰ ਸੈਂਟਰ ਲਈ ਹਦਾਇਤਾਂ

1. ਵਿਦਿਆਰਥੀ ਪਹਿਲੀ ਵਾਰ ਗੁਰਮੁਖੀ ਸਿੱਖ ਰਹੇ ਹਨ। ਹੋ ਸਕਦਾ ਹੈ ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੋਂ ਅਨਜਾਣ ਹੋਣ। ਸੇ ਪ੍ਰਸ਼ਨਾਂ ਦਾ ਪੱਧਰ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਸੀਮਾ ਨੂੰ ਧਿਆਨ ਵਿੱਚ ਰੱਖ ਕੇ ਨਿਸ਼ਚਤ ਕੀਤਾ ਜਾਵੇ।
2. ਸਾਰੇ ਭਾਗਾਂ ਵਿੱਚੋਂ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ।
3. ਸਰਲ ਤੇ ਸਪੱਸ਼ਟ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ।
4. ਵਰਣਾਤਮਕ ਪ੍ਰਸ਼ਨ ਨਾ ਪੁੱਛੇ ਜਾਣ।
5. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਲਿਪੀ ਦਾ ਬੋਧ ਕਰਵਾਉਣ ਲਈ ਧੁਨੀਆਂ, ਲਿਪੀ ਚਿੰਨ੍ਹਾਂ ਦੀ ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ਸਬੰਧੀ ਸੰਖੇਪ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ। ਲੋੜ ਅਨੁਸਾਰ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਛੋਟੇ ਜਾਂ ਚੋਣ ਦੇਣੀ ਲਾਜ਼ਮੀ ਹੈ।
6. ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ਦੇ ਸਾਰੇ ਭਾਗਾਂ ਵਿੱਚੋਂ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ। ਲੋੜ ਅਨੁਸਾਰ ਚੋਣ ਅਤੇ ਛੋਟੇ ਦਿੱਤੀ ਜਾਵੇ।

ਸਹਾਇਕ ਪਾਠ ਸਮੱਗਰੀ

1. Hardev Bahri, Teach Yourself Punjabi, Publication Bureau, Punjabi University, Patiala, 2011.
2. Ujjal Singh Bahri and Paramjit Singh Walia, Introductory Punjabi, Publication Bureau, Punjabi University, Patiala, 2003.
3. Gurinder Singh Mann, An introduction to Punjabi : Grammar, Conversation and Literature, Publication Bureau, Punjabi University Patiala, 2011
4. www.elearnpunjabi.com
5. www.pt.learnpunjabi.org
6. ਸੀਤਾ ਰਾਮ ਬਾਹਰੀ, ਪੰਜਾਬੀ ਸਿੱਖੀਏ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2002 (ਹਿੰਦੀ)

B.VCS-122: FUNDAMENTALS OF DBMS

Max Marks: 60

Marks: 35%

Maximum Time: 3 Hrs. Min Pass

Lectures to be delivered: 55-65

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to DBMS: Definition of Database, Components of DBMS Environment, Database Schema and Instance. Three Level architecture of DBMS, Mapping between different levels, Data Independence.

Database languages: DDL, DML, DCL.

Keys : Super, candidate, primary, unique, foreign, composite, alternate

E-R model: Definition, Entity and Relationship, cardinality of a relationship, E-R Diagram Notations, Modeling using E-R Diagrams, Aggregation, Generalization, Specialization, Transforming E-R Model into Physical database Design, merits and demerits of E-R Modeling.

Record Based Logical Models: Hierarchical Model - Operations, Implementation, Advantages and Disadvantages. Network Model - Operations, Implementation, Advantages and Disadvantages, Relational Model - Operations, Implementation, Advantages and Disadvantages. Comparison between Hierarchical, Network and Relational Model

SECTION B

Normalization: Definition, Need, Process: Determinant, Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive dependency, Multi-valued Dependency, Join Dependency, Types of Normal Forms, Merits and Demerits of Normalization.

Transaction & Concurrency Control: Concept of transaction, ACID properties, Serializability, States of transaction, Concurrency Control – Locking techniques, time-stamp based protocols.

Database Security: Security requirements, database integrity, Granting & revoking privileges.

Reference Books:

1. JD Ullman, Garcia Molina, Database System: The Complete Book, Pearson Education.
2. Ramez Elmasri, Fundamentals of Database Systems, Pearson Education.
3. C.J Date, An Introduction to Database System, Pearson Education.
4. Parteek Bhatia, Database Management System. Kalyani Publications.
5. Henry F. Korth, Database System Concepts, Tata McGraw-Hill.

B.VCS-123 FUNDAMENTALS OF CYBER SECURITY

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Cyber Security Vulnerabilities and Cyber Security Safeguards : Overview of Cyber Security, Cyber Security Vulnerabilities-Overview, vulnerabilities in software, System administration, Complex Network Architectures, Open Access to Organizational Data, Weak Authentication, Unprotected Broadband communications, Poor Cyber Security Awareness. Cyber Security Safeguards- Overview, Access control, Audit, Authentication, Biometrics, Cryptography, Deception, Denial of Service Filters, Ethical Hacking, Firewalls, Intrusion Detection Systems, Response, Scanning, Security policy, Threat Management.

Securing Web Application, Services and Servers:-Introduction, Basic security for HTTP Applications and Services, Basic Security for SOAP Services, Identity Management and Web Services, Authorization Patterns, Security Considerations, Challenges.

Intrusion Detection and Prevention: Intrusion, Physical Theft, Abuse of Privileges, Unauthorized Access by Outsider, Malware infection, Intrusion detection and Prevention Techniques, Anti-Malware software, Network based Intrusion detection Systems, Network based Intrusion Prevention Systems, Host based Intrusion prevention Systems, Security Information Management, Network Session Analysis, System Integrity Validation.

SECTION B

Cryptography and Network Security: Introduction to Cryptography, Symmetric key Cryptography, Asymmetric key Cryptography, Message Authentication, Digital Signatures, Applications of Cryptography. Overview of Firewalls- Types of Firewalls, User Management, VPN Security Security Protocols: - security at the Application Layer- PGP and S/MIME, Security at Transport Layer- SSL and TLS, Security at Network Layer-IPSec.

Cyberspace and the Law : Introduction, Cyber Security Regulations, Roles of International Law, the state and Private Sector in Cyberspace, Cyber Security Standards. The INDIAN Cyberspace, National Cyber Security Policy 2013

Cyber Forensics : Introduction to Cyber Forensics, Handling Preliminary Investigations, Controlling an Investigation, Conducting disk-based analysis, Investigating Information-hiding, Scrutinizing E-mail, Validating E-mail header information, Tracing Internet access, Tracing memory in real-time.

Reference Books:

1. Mark Minasi and John Paul Mueller Mastering, Window Server 2008
2. Danielle Ruest, Microsoft Windows Server 2008 “The Complete Reference”, hyperlink "[http://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Nelson +Ruest%22](http://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Nelson+Ruest%22)"
3. MTA Windows of Fundamentals (Microsoft Official Academic Course) [Paperback] Microsoft Official Academic Course.
4. Windows 2010 Configuration : Microsoft Certified Technology Specialist Exam 70-680 [With Access Code] (Microsoft Official Academic Course) [Paperback] Craig Zacker (Author)
5. Window Server Administration fundamentals : Microsoft Official Academic Course

B.VCS-124 PROGRAMMING USING C++

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction: Basics of Object Oriented Programming (OOP), Difference between C & C++, Manipulators, Storage classes.

Classes and Objects: Class Declaration and Class Definition, Defining member functions, inline functions, Nesting of member functions, Members access control. this pointer. Objects: Object as function arguments, array of objects, functions returning objects, Const member.

Static data members and Static member functions, Friend functions and Friend classes **Constructors:** properties, types of constructors, Dynamic constructors, Constructor overloading.

Destructors: Properties, Virtual destructors. Destroying objects. Rules for constructors and destructors.

Array of objects. Dynamic memory allocation using new and delete operators, Nested and container classes, Scopes: Local, Global, Namespace and Class.

Inheritance: Defining derived classes, Types of inheritance, types of derivation- public, private, protected, function redefining, constructors in derived class, Types of base classes – abstract and virtual.

SECTION B

Operator overloading: rules for operator overloading overloading binary operator, overloading unary operators, Function overloading.

Polymorphism : virtual functions, late binding, pure virtual functions and abstract base class
Difference between function overloading, redefining, and overriding.

Templates: Generic Functions and Generic Classes, Overloading of template functions. **Exception Handling :** catching class types, handling derived class exceptions, catching exceptions, restricting exception, rethrowing exceptions, terminate and unexpected, uncaught exceptions.

Reference Books:

1. E. Balaguruswamy, Object Oriented Programming with C++, Tata McGraw-Hill.
2. Deitel & Deitel, "C++ How to Program", Pearson Education.
3. Herbert Schildt, The Complete Reference C++, Tata McGraw-Hill, 2001.
4. Robert Lafore, Object Oriented Programming in C++, Galgotia Publications,
5. Bjarne Strastrup, "The C++ Programming Language", Addison- Wesley Publication.
6. E. Balagurusamy, Object Oriented Programming with C++, Tata McGraw-Hill.
7. Anshuman Sharma, Learn Programming in C++, Lakhanpal Publishers.

B.VCS-125 SOFTWARE LAB – II (Based on B.VCS-123)

Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper B.VCS-123: Fundamentals of Cyber Security

1. Maximum Marks for Continuous Assessment: 50
2. Maximum Marks for University Examination: 50

B.VCS-126 SOFTWARE LAB – III (Based on B.VCS-124)

Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper B.VCS-124. Students are required to develop the following programs with internal documentation:

1. Write a program to find area of rectangle using the concept of classes & object.
2. Write a program to implement the concept of array of object.
3. Write a program to show the use of friend function.
4. Write a program to show the use of constructor overloading.
5. Write a program to show the use of copy constructor.
6. Write a program to show the use of destructors.
7. Write a program to show the use of virtual function.
8. Write a program to implement the concept of multilevel inheritance.
9. Write a program to implement the concept of multiple inheritance.
10. Write a program of unary operator overloading.
11. Write a program of Binary operator overloading.
12. Write a program to swap two values independent of type of the variable using function template.
13. Write a program to illustrate how an exception is handled using try catch block using throw statements.
14. Write a program to demonstrate how to insert and extract an object to and from data files.
15. Write a program to count the total number of account objects in a file and then display information of a particular account object.

B.VCS-127: LANGUAGE LAB – II (Based on B.VCS-121-A/B)

Max Marks: 50

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Akhar 2016

1. Punjabi Typing in Unicode using various keyboard layouts
2. Formatting and editing of Punjabi documents
3. Font conversion from ASCII to Unicode and reverse
4. Spell checking and grammar checking of Gurmukhi text
5. Using Punjabi-English Dictionary
6. Sorting names according to Punjabi sorting rules
7. Transliteration between Gurmukhi, Shahmukhi and Roman scripts
8. Optical Character Recognition of Gurmukhi text