

SYLLABUS

FOR

BACHELOR OF COMPUTER

APPLICATIONS

(BCA)

(Semester: I & II)
Session: 2018-19



DIRECTORATE OF OPEN AND DISTANCE LEARNING (ODL)

GURU NANAK DEV UNIVERSITY, AMRITSAR

(ESTABLISHED UNDER STATE LEGISLATURE ACT NO. 21 OF 1969)

Accredited by National Assessment and Accreditation Council (NAAC) At 'A++' Grade (Highest Level) As Per Modified Criteria Notified On 27/07/2017 And Conferred 'University With Potential For Excellence' Status And 'Category-I University' As Per University Grants Commission (F.No. 1-8-2017/(CPP-II) Dated 12/02/2018)

Note:

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BACHELOR OF COMPUTER APPLICATIONS (SEMESTER SYSTEM) under Directorate of Open & Distance Learning, Guru Nanak Dev University, Amritsar

Eligibility:

+2 with at least 40% marks in aggregate or equivalent examination.

Semester-I

Paper Code	Subject	Marks			Credits
		Internal Assessment	End Term	Total	
ODBCA-101T	Introduction to Programming in C	20	80	100	4
ODBCA-102T	Introduction to Computers and Information Technology	20	80	100	4
ODBCA-103T	Communication Skills in English-I	10	40	50	2
ODBCA-104T	Punjabi Compulsory/Punjab History Culture - I	10	40	50	2
ODBCA-105P	Practical-I	20	80	100	4
-	* Drug Abuse: Problem, Management and Prevention (Compulsory Paper) Problem of Drug Abuse	10	40	50	-
Total Marks & Credits		90	360	450	16

Note: * Credits not to be counted towards SGPA.

Semester-II

Paper Code	Subject	Marks			Credits
		Internal Assessment	End Term	Total	
ODBCA-201T	Introduction to Programming in C++	20	80	100	4
ODBCA-202T	Principles of Digital Electronics	20	80	100	4
ODBCA-203T	Numerical Methods and Statistical Techniques	15	60	75	3
ODBCA-204T	Communication Skills in English - II	10	40	50	2
ODBCA-205T	Punjabi (Compulsory)/Punjab History Culture - II	10	40	50	2
ODBCA-206P	Practical-II	15	60	75	3
-	* Drug Abuse: Problem, Management and Prevention (Compulsory Paper) : Management and Prevention	10	40	50	-
Total Marks & Credits		100	400	500	18

Note: * Credits not to be counted towards SGPA.

ODBCA-101T: INTRODUCTION TO PROGRAMMING in C**Time: 03 Hours****Max. Marks: 100 Marks****Internal Assessment: 20 Marks****End Term: 80 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A

Fundamentals: Character set, Identifiers and Key Words, Data types, Constants, Variables, Expressions, Statements, Symbolic Constants.

Operations and Expressions: Arithmetic operators, Unary operators, Relational Operators, Logical Operators, Assignment and Conditional Operators, Library functions. Data, Input and Output statements

Section-B

Control Statements: Preliminaries, While, Do-while and For statements, Nested loops, If-else, Switch, Break – Continue statements.

Program Structure Storage Class: Automatic, external and static variables, multiple programs, more about library functions.

Section-C

Functions: Brief overview, defining, accessing functions, passing arguments to function, specifying argument data types, function prototypes, recursion.

Arrays: Defining, processing an array, passing arrays to a function, multi-dimensional arrays.

Strings: String declaration, string functions and string manipulation.

Section-D

Structures & Unions: Defining and processing a structure, user defined data types, structures and pointers, passing structures to functions, self referenced structure, unions.

Pointers: Fundamentals, pointer declaration, passing pointer to a function, pointer and one dimensional arrays, operation on pointers, pointers & multi-dimensional arrays of pointers, passing functions, other functions, more about pointer declarations.

References:

1. Bala guru swamy: “Programming in ANSI C”.
2. Schaum Outline Series: “Programming in C”.
3. Dennis & Ritchie: “Programming in C”.
4. Stephen G. Kochan: “C Programming”.
5. <http://www.swayam.gov.in>
6. <http://edx.org> (formerly <http://mooc.org>)

ODBCA-102T: INTRODUCTION TO COMPUTERS AND INFORMATION TECHNOLOGY**Time: 03 Hours****Max. Marks: 100 Marks****Internal Assessment: 20 Marks****End Term: 80 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A**Introduction to Computers and its Applications:**

- Computer as a system, basic concepts, functional units and their inter relation.
- Milestones in Hardware and Software.
- Batch oriented / on-line / real time applications.
- Application of computers.

Section-B**Interacting with the Computer:**

Input Devices: Keyboard, mouse, pens, touch screens, Bar Code reader, joystick, source data automation, (MICR, OMR, OCR), screen assisted data entry: portable / handheld terminals for data collection, vision input systems.

Output Devices: Monitor, Serial line page printers, plotters, voice response units.

Data Storage Devices and Media: Primary storage (Storage addresses and capacity, type of memory), Secondary storage, Magnetic storage devices and Optical Storage Devices

Section-C

Word Processor using Microsoft Office: Overview, creating, saving, opening, importing, exporting and inserting files, formatting pages, paragraphs and sections, indents and outdents, creating lists and numbering. Headings, styles, fonts and font size Editing, positioning and viewing texts, Finding and replacing text, inserting page breaks, page numbers, book marks, symbols and dates. Using tabs and tables, header, footer and printing.

Section-D

Presentation Software using Microsoft Office: Presentation overview, entering information, Presentation creation, opening and saving presentation, inserting audio and video **Spreadsheet using Microsoft Office:** Spreadsheet overview, Editing, Formatting, Creating formulas, Graphs.

Text/References:

1. Computer Fundamentals	P.K. Sinha.
2. Introduction to Computers	N. Subramanian.
3. Introduction to Computers	Peter Norton McGraw Hill.
4. MS-Office	BPB Publications.
5. Windows Based Computer Courses	Gurvinder Singh & Rachpal Singh, Kalyani Pub.
6. e-Books at OpenOffice.org	
7. A Conceptual Guide to OpenOffice.org3, 2 nd Edition,	R.Gabriel Gurley
8. http://www.swayam.gov.in	
9. http://edx.org (formerly http://mooc.org)	

ODBCA-103T: COMMUNICATION SKILLS IN ENGLISH - I**Time: 03 Hours****Max. Marks: 50 Marks****Internal Assessment: 10 Marks****End Term: 40 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A**(Reading Skills and Sentence Structure)**

Reading for direct meanings; Reading for understanding concepts, details, coherence, logical progression and meanings of phrases/ expressions, Structure of a sentence, Voice, narration, combination of two simple sentence etc.

Activities:

- a. Active reading of passages on general topics
- b. subject-verb agreement
- c. using appropriate tenses/ verb etc.

Section-B**(Reading Skills)**

Reading Tactics and strategies; Improving reading Skills, Reading purposes–kinds of purposes and associated comprehension

Activities:

- a. Comprehension questions in multiple choice format
- b. Short comprehension questions based on content and development of ideas

Section-C**(Writing Skills)**

Guidelines for effective writing, writing styles for application, resume, notes making, report writing

Activities:

- a. Organising the details in a sequential order.
- b. Converting a biographical note into a sequenced resume or vice-versa
- c. Ordering and sub-dividing the contents while making notes.
- d. Resume and Report Writing

Section-D
(Writing Skills)

Personal letter, official/ business letter, memo, notices etc.; outline and revision and Tender etc.

Activities:

- a. Formatting personal and business letters
- b. Writing notices for circulation/ boards
- c. Tender Writing
- d. Memorandum

Recommended Books:

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP
3. <http://swayam.gov.in>
4. <http://edx.org> (formerly <http://mooc.org>)

ODBCA-104T - PUNJABI (COMPULSORY) (OPTION-ONE)

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ : 40+10=50

Section - A

ਗਿਆਨ ਮਾਲਾ (ਵਿਗਿਆਨਕ ਤੇ ਸਮਾਜ-ਵਿਗਿਆਨਕ ਲੇਖਾਂ ਦਾ ਸੰਗ੍ਰਹੀ), (ਸੰਪਾ. ਡਾ. ਸਤਿੰਦਰ ਸਿੰਘ, ਪ੍ਰੋ. ਮਹਿੰਦਰ ਸਿੰਘ ਬਨਵੈਤ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

ਲੇਖ : ਪਹੀਆਂ ਪ੍ਰਦੂਸ਼ਣ, ਭਰੂਣ ਹੱਤਿਆ ਦੇ ਦੇਸ਼ ਵਿਚ, ਨਾਰੀ ਸ਼ਕਤੀ, ਵਾਡਾਵਰਣੀ ਪ੍ਰਦੂਸ਼ਣ ਅਤੇ ਮਨੁੱਖ, ਏਡਜ਼ : ਇਕ ਰੰਗੀਰ ਸੰਕਟ।

Section - B

ਆਤਮ ਅਨਾਤਮ (ਸੰਪ. ਸੁਹਿੰਦਰ ਬੀਰ ਅਤੇ ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੁ) (ਪ੍ਰੋ. ਮੇਹਨ ਸਿੰਘ, ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ, ਸਿਵ ਕੁਮਾਰ ਬਟਾਲਵੀ, ਸੁਰਜੀਤ ਪਾਤਰ, ਪਾਸ) ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

Section - C

ਪੈਰੂ ਰਚਨਾ

ਪੈਰੂ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ।

Section - D

(ਉ) ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਤ : ਉਚਾਰਨ ਅੰਗ, ਉਚਾਰਨ ਸਥਾਨ ਤੇ ਵਿਧੀਆਂ, ਸਵਰ, ਵਿਅੰਜਨ, ਸੁਰ।

(ਅ) ਭਾਸ਼ਾ ਵੰਨਰੀਆਂ : ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ-ਭਾਸ਼ਾ ਦਾ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ-ਚਿੰਨ੍ਹ।

ਮਾਤ ਭਾਸ਼ਾ ਦਾ ਅਧਿਆਪਨ

(ਉ) ਪਹਿਲੀ ਭਾਸ਼ਾ ਦੇ ਤੌਰ ਉੱਤੇ

(ਅ) ਦੂਜੀ ਭਾਸ਼ਾ ਦੇ ਤੌਰ ਉੱਤੇ

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ ।

1	ਕਿਸੇ ਨਿਬੰਧ ਦਾ ਸਾਰ ਜਾਂ ਉਸਦਾ ਵਿਸ਼ਾ ਵਸਤੂ (ਦੋ ਵਿਚੋਂ ਇਕ) ।	10 ਅੰਕ
2	ਆਤਮ ਅਨਾਤਮ : ਸਾਰ, ਵਿਸ਼ਾ ਵਸਤੂ, ਪਾਤਰ ਚਿਤਰਣ ।	05 ਅੰਕ
3	ਪੈਰੂ ਰਚਨਾ : ਤਿੰਨ ਵਿਸ਼ਿਆਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਉੱਤੇ ਪੈਰੂ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇ ।	05 ਅੰਕ
4	ਪੈਰੂ ਦੇ ਕੇ ਉਸ ਬਾਰੇ ਪੰਜ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ	05 ਅੰਕ
5	ਨੰਬਰ 5 ਉੱਤੇ ਦਿੱਤੀ ਵਿਆਕਰਣ ਦੇ ਆਧਾਰ 'ਤੇ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ।	05 ਅੰਕ
6	ਨੰਬਰ 6 ਵਿਚ ਮਾਤ ਭਾਸ਼ਾ ਦੇ ਪਹਿਲੀ ਭਾਸ਼ਾ ਅਤੇ ਦੂਜੀ ਭਾਸ਼ਾ ਵਜੋਂ ਅਧਿਆਪਨ, ਮਹੱਤਵ ਅਤੇ ਸਮੱਸਿਆਵਾਂ ਬਾਰੇ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੋ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਦੋ ਦੋ ਉੱਤਰ ਦੇਣਾ ਹੋਵੇਗਾ।	5 + 5=10 ਅੰਕ

Suggested Readings:

- ਗਿਆਨ ਮਾਲਾ
- ਆਤਮ ਅਨਾਤਮ
- <http://swayam.gov.in/>
- <http://edx.org> formerly <http://mooc.org/>

ODBCA-104T : Punjab HISTORY CULTURE (Option Two)**Time: 03 Hours****Max. Marks: 50 Marks****Internal Assessment: 10 Marks****End Term: 40 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A

1. Land and the People.
2. Bhakti Movement

Section-B

3. Life and Teaching of Guru Nanak Dev.
4. Contribution of Guru Angad Dev, Guru Arjun Dev ,Guru Amar Das and Guru Ram Das.

Section-C

5. Guru Hargobind.
6. Martyrdom of Guru Teg Bahadur

Section-D

7. Guru Gobind Singh and the Khalsa.
8. Banda Singh Bahadur: Conquests and Execution.

Suggested Reading

Kirpal Singh(ed.), *History and Culture of the Punjab, Part-ii*, Punjabi University, Patiala. 1990.

Fauja Singh (ed.), *History of Punjab, Vol. III* Punjabi University, Patiala, 1987.

J.S. Grewal, *The Sikhs of the Punjab, Cup, Cambridge*, 1991.

Khushwant Singh, *A History of the Sikhs*, Vol. I, OUP, New Delhi, 1990

<http://swayam.gov.in/>

<http://edx.org> formerly <http://mooc.org/>

ODBCA-105P : Practical – I
(MS Office 2010 & Basic C Programming)

Time: 03 Hours

Max. Marks: 100 Marks

Internal Assessment: 20 Marks

End Term: 80 Marks

Operational Knowledge of:

1. C Programming
2. Windows Based Operating System
3. MS – OFFICE (Word and Power Point)

DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION (COMPULSORY PAPER)
PROBLEM OF DRUG ABUSE**Time: 03 Hours****Max. Marks: 50 Marks****Internal Assessment: 10 Marks****End Term: 40 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section - A

1. **Meaning of Drug Abuse:** Concept and Overview, Historical Perspective of Drug Abuse, Drug Dependence, Drug Addiction, Physical and Psychological Dependence: Drug Tolerance and withdrawal symptoms.

Section - B

2. **Types of following Abused Drugs and their Effects:**

Stimulants: Amphetamines – Benzedrine, Dexedrine, Cocaine.

Depressants: Alcohol Barbiturates: Nembutal, Seconal, Phenobarbital and Rohypnol.

Section - C**Types of following Abused Drugs and their Effects:**

Narcotics: Heroin, Morphine, Oxycodone.

Hallucinogens: Cannabis, Marijuana, Hashish, Hash Oil, MDMA, LSD.

Steroids.

Section - D

3. **Nature and Extent of the Problem:** Magnitude or prevalence of the menace of Drug Abuse in India and Punjab, Vulnerable groups by age, gender and economic status, Signs and Symptoms of Drug Abuse: Physical, Academic, Behavioral and Psychological Indicators.

References:

1. Ahuja, Ram (2003), Social Problems in India, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
3. Inciardi, J.A. 1981. The Drug Crime Connection. Beverly Hills: Sage Publications.
4. Kapoor. T. (1985) Drug epidemic among Indian Youth, New Delhi: Mittal Pub.
5. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
6. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
7. Sain, Bhim 1991, Drug Addiction Alcoholism, Smoking obscenity New Delhi: Mittal Publications.
8. Sandhu, Ranvinder Singh, 2009, Drug Addiction in Punjab: A Sociological Study. Amritsar: Guru Nanak Dev University.
9. Singh, Chandra Paul 2000. Alcohol and Dependence among Industrial Workers: Delhi: Shipra.
10. Sussman, S and Ames, S.L. (2008). Drug Abuse: Concepts, Prevention and Cessation, Cambridge University Press.
11. World Drug Report 2010, United Nations office of Drug and Crime.
12. World Drug Report 2011, United Nations office of Drug and Crime.
13. <http://swayam.gov.in>
14. <http://edx.org> (formerly <http://mooc.org>)

ODBCA-201T - INTRODUCTION TO PROGRAMMING IN C++**Time: 03 Hours****Max. Marks: 100 Marks****Internal Assessment: 20 Marks****End Term: 80 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A

Programming Paradigms: Introduction to the object oriented approach towards programming by discussing Traditional, Structured Programming methodology.

Objects & Classes: Object Definition, Instance, Encapsulation, Data Hiding, Abstraction, Inheritance, Messages, Method, Polymorphism, Classes, Candidate & Abstract Classes to be examples of the Design process.

Section-B

Object Oriented Programming using C++: Characteristics of OOP, Overview of C++, I/O using cout and cin, Objects and Classes, Member functions and data, private & public, constructor & destructor, Constructor Overloading, Types of Constructors.

Section-C

Function Overloading: Function Overloading, Default Arguments, Ambiguity in Function Overloading.

Operator Overloading: Overloading unary and binary operators, Type Conversion using Operator Overloading

Inheritance: Concept of inheritance, Base & derived classes, Access Specifiers, Class Hierarchies, Types of Inheritance with examples.

Section-D

Virtual Functions and Polymorphism: Virtual functions, friend functions, static function, this pointer, polymorphism, Types of Polymorphism with examples, templates, class templates.

Books:

1. Teach Yourself C++, Herbert Schildth, Tata McGraw Hill.
2. Designing Object Oriented Software Rebacca Wirfs - Brock Brian Wilerson, PHI.
3. Object Oriented Programming in Turbo C++, Robert Lafore, Galgotia Publication.
4. Designing Object Oriented Applications using C++ & Booch Method, Robert C. Martin.
5. <http://swayam.gov.in>
6. <http://edx.org> (formerly <http://mooc.org>)

ODBCA-202T : PRINCIPLES OF DIGITAL ELECTRONICS**Time: 03 Hours****Max. Marks: 100 Marks****Internal Assessment: 20 Marks****End Term: 80 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A

Number System: Introduction, number conversion system , binary arithmetic, representation of signed binary numbers, 1's and 2's complement, Codes: straight binary code, BCD Code Excess3 Code, Grey Code ASCII, Integer and floating point representation.

Section-B

Logic Gates and Boolean Algebra: Logic gates, Universal Gates, Boolean algebra and Minimization techniques, canonical forms of Boolean expressions, K-Map

Section-C

Combinational Circuits: Adder, Subtracter, Multiplexer, Demultiplexer, Decoer, Encoder

Sequential Circuits: Flip-flops, clocks and timers, registers, counter

Section-D

Semiconductor memories: Introduction, Static and dynamic devices, read only & random access memory chips, PROMS and EPROMS Address selection logic. Read and write control timing diagrams for ICs

References:

1. Integrated Electronics by Millman, Halkias McGraw Hill.
2. Malvino: Digital Computer Electronics, McGraw Hill.
3. D.A. Hodges & H.G. Jackson, Analysis and Design of Integrated Circuits, International, 1983.
4. Joph. F. Wakerley, Digital Principles and Practices.
5. Uijenbeck, John: Digital Electronics: A Modern Approach, Prentice Hall, 1994.
6. Mano, M. Morris: Digital Logic and Computer Design, Edition, 1993.
7. <http://swayam.gov.in>
8. <http://edx.org> (formerly <http://mooc.org>)

ODBCA-203T : NUMERICAL METHODS & STATISTICAL TECHNIQUES**Time: 03 Hours****Max. Marks: 100 Marks****Internal Assessment: 20 Marks****End Term: 80 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A**Introduction:**

1. Numerical Methods, Numerical methods versus numerical analysis, Errors and Measures of Errors.
2. Non-linear Equations, Iterative Solutions, Multiple roots and other difficulties, Interpolation methods, Methods of bi-section, False position method, Newton Raphson – Method.

Section-B

3. Simultaneous Solution of Equations, Gauss Elimination Method Gauss Jordan Method.
4. Numerical Integration and different Trapezoidal Rule, Simpson's 3/8 Rule.

Section-C

5. Interpolation and Curve Fitting, Lagrangian Polynomials, Newton's Methods: Forward
Difference Method, Backward Difference Method Divided Difference Method.
6. Least square fit linear trend, Non-linear
trend. $Y = ax^b$
 $Y = ab^x$
 $Y = ae^x$
Polynomial fit: $Y = a+bx+cn^2$

Section-D

Statistical Techniques:

1. Measure of Central Tendency, Mean Arithmetic, Mean geometric, Mean harmonic, Mean, Median, Mode.
2. Measures of dispersion, Mean deviation, Standard deviation, Co-efficient of variation.
3. Correlation.

Books Recommended:

1. V. Rajaraman: Computer Oriented Numerical Methods, Prentice Hall of India Private Ltd., New Delhi.
2. B.S. Grewal, Numerical Methods for Engineering, Sultan Chand Publication
3. <http://swayam.gov.in>
4. <http://edx.org> (formerly <http://mooc.org>)

ODBCA-204T : COMMUNICATION SKILLS IN ENGLISH – II**Time: 03 Hours****Max. Marks: 50 Marks****Internal Assessment: 10 Marks****End Term: 40 Marks****Instructions for the Paper-Setter/examiner:**

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A

Listening Skills: Barriers to listening; effective listening skills; feedback skills, Attending telephone calls; note taking.

Activities:

- a) Listening exercises – Listening to conversation, News and TV reports
- b) Taking notes on a speech/lecture

Section B

Conversational Skills: Components of a meaningful and easy conversation; understanding the cue and making appropriate responses; forms of polite speech; asking and providing information on general topics.

Activities:

- a) Making conversation and taking turns
- b) Oral description or explanation of a common object, situation or concept

Section C

Speaking Skills: The study of sounds of English, stress Situation based Conversation in English, Essentials of Spoken English

Activities:

- a. Presentation on a given topic
- b. Extempore

Section D

Oral Testing: Meaning of Interviews, Types of Interviews, Planning and conducting Interviews, Meaning and Importance of Group Discussion

Activities:

- a. Giving Interviews
- b. Group Discussion

PRACTICAL / ORAL TESTING (Internal)**Marks: 10****Course Contents:**

1. Oral Presentation with/without audio visual aids.
2. Group Discussion.
3. Listening to any recorded or live material and asking oral questions for listening comprehension.

Questions:

1. Oral Presentation will be of 5 to 10 minutes duration. (Topic can be given in advance or it can be of student's own choice). Use of audio visual aids is desirable.
2. Group discussion comprising 8 to 10 students on a familiar topic. Time for each group will be 15 to 20 minutes.

ODBCA-205T : PUNJABI (COMPULSORY) (OPTION-ONE)

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ : 40+10=50

Section - A

1. ਗਿਆਨ ਮਾਲਾ (ਵਿਰਿਆਨਕ ਤੇ ਸਮਾਜ-ਵਿਰਿਆਨਕ ਲੇਖਾਂ ਦਾ ਸੰਗ੍ਰਹਿ)

(ਸੰਪ. ਡਾ. ਸਤਿੰਦਰ ਸਿੰਘ, ਪ੍ਰੈ. ਮਹਿੰਦਰ ਸਿੰਘ ਬਨਵੈਡ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2007

ਲੇਖ : ਸਾਹਿਤ ਤੇ ਲੋਕ ਸਾਹਿਤ, ਅੱਖਾਂ, ਅਚੇਤਨ ਦਾ ਗੁਣ ਤੇ ਸੁਭਾਅ, ਕੰਪਿਊਟਰ ਅਤੇ ਇੰਟਰਨੈੱਟ, ਮਨੁੱਖੀ ਅਧਿਕਾਰ।

Section - B

2. ਆਤਮ ਅਨਾਤਮ (ਸੰਪ. ਸਹਿੰਦਰ ਬੀਰ ਅਤੇ ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੁ) (ਕਹਾਣੀਆਂ)

ਪਾਣ ਦੀ ਧੀ (ਸੁਜਾਨ ਸਿੰਘ), ਸਾਂਵੀ ਕੰਪ (ਸਤੋਖ ਸਿੰਘ ਧੀਰ), ਉਜਾੜ (ਕੁਲਵੰਤ ਸਿੰਘ ਵਿਰਕ), ਘੱਟਣਾ (ਮੋਹਨ ਭੰਡਾਰੀ), ਦਲਦਲ (ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੁ) ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

Section - C

3. ਸ਼ਬਦ-ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ : ਪਰਿਭਾਸਾ, ਮੁੱਦਲੇ ਸੰਕਲਪ

4. ਸ਼ਬਦ ਸ੍ਰੋਣੀਆਂ

Section - D

5. ਪੈਰੂ ਰਚਨਾ

6. ਪੈਰੂ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ

7. ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ :

1	ਕਿਸੇ ਨਿਕੱਧ ਦਾ ਸਾਰ ਜਾਂ ਉਸਦਾ ਵਿਸ਼ਾ ਵਸਤੂ (ਦੋ ਵਿਚੋਂ ਇਕ) ।	10 ਅੰਕ
2	ਆਤਮ ਅਨਾਤਮ : ਸਾਰ, ਵਿਸ਼ਾ ਵਸਤੂ, ਪਾਤਰ ਚਿਤਰਣ ।	05 ਅੰਕ
3-4	3-4 ਨੰਬਰ ਉਤੇ ਦਿੱਤੀ ਵਿਆਕਰਣ ਦੇ ਆਧਾਰ ਤੇ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ।	05 ਅੰਕ
5	ਪੈਰੂ ਰਚਨਾ : ਤਿੰਨ ਵਿਸ਼ਾਵਾਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਉਤੇ ਪੈਰੂ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇ ।	05 ਅੰਕ
6	ਪੈਰੂ ਦੇ ਕੇ ਉਸ ਬਾਰੇ ਪੰਜ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਨੰਬਰ 7 ਵਿਚ ਅੱਠ ਅਖਾਣ ਅਤੇ ਅੱਠ ਮੁਹਾਵਰ	05 ਅੰਕ
7	ਨੰਬਰ 7 ਵਿਚ ਅੱਠ ਅਖਾਣ ਅਤੇ ਅੱਠ ਮੁਹਾਵਰੇ ਪੁੱਛੋ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਪੰਜ-ਪੰਜ ਤੋਂ ਵਾਕਾਂ ਵਿਚ ਵਰਤ ਕੇ ਅਰਥ ਸਪੱਸ਼ਟ ਕਰਨੇ ਹੋਣਗੇ।	5 + 5=10 ਅੰਕ

Suggested Readings:

- ਗਿਆਨ ਮਾਲਾ
- ਆਤਮ ਅਨਾਤਮ
- <http://swayam.gov.in/>
- <http://edx.org> formerly <http://mooc.org/>

ODBCA-205T : Punjab HISTORY CULTURE-II (Option - Two)
(Special paper in lieu of Punjabi Compulsory)

Time: 03 Hours

Max. Marks: 50 Marks

Internal Assessment: 10 Marks

End Term: 40 Marks

Instructions for the Paper-Setter/examiner:

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section-A

1. Sikh Struggle for Sovereignty.
2. Ranjit Singh: Conquests, Administration and the Anglo-Sikh Relations.

Section-B

1. Anglo-Sikh Wars and the Annexation.
2. The Punjab under the British: New Administration, Education and social Change.

Section-C

1. Economic Changes: Agricultural
2. Socio-Religious Reform Movements.

Section-D

1. Role of Punjab in the Freedom Struggle.
2. Fairs and Festivals.

Suggested Reading

1. Kirpal Singh (ed.), *History and Culture of the Punjab*, Part-II, Punjabi University, Patiala, 1990.
2. Fauja Singh (ed.), *History of Punjab*, Vol. III, Punjabi University, Patiala, 1987.
3. J.S. Grewal, *The Sikhs of the Punjab*, Cup, Cambridge, 1991.
4. Khushwant Singh, *A History of the Sikhs*, Vol. I, OUP, New Delhi, 1990
5. <http://swayam.gov.in/>
6. <http://edx.org> formerly <http://mooc.org/>

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Bachelor of Computer Applications (Semester - II)
ODBCA206P - Practical-II

(Advanced C++ Programming)

M. Marks: 80

Operational Knowledge and Implementation of Numerical Methods & Statistical techniques using C++ language.

DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION (COMPULSORY PAPER)
DRUG ABUSE: MANAGEMENT AND PREVENTION

Time: 03 Hours

Max. Marks: 50 Marks

Internal Assessment: 10 Marks

End Term: 40 Marks

Instructions for the Paper-Setter/examiner:

1. Question paper shall consist of **Four sections**.
2. Paper setter shall set **Eight questions** in all by selecting **Two questions** of equal marks from each section. However a question may have sub-parts (not exceeding four sub-parts) and appropriate allocation of marks should be done for each sub-part.
3. Candidates shall attempt **Five questions** in all, by at least selecting **One question** from each section and the **5th question** may be attempted from any of the **Four sections**.
4. The question paper should be strictly according to the instructions mentioned above. In no case a question should be asked outside the syllabus.

Section - A

1) Consequences of Drug Abuse for:

Individual – Education, employment and income issues.

Family – Violence

Society – Crime.

Nation – Law and order problem.

Section - B

2) Management of Drug abuse:

Medical Management: Medication for treatment and to reduce withdrawaleffects, Drug De-addiction clinics, Relapse management.

Psycho-Social Management: Counselling, family and group therapy, behavioural and cognitive therapy, Environmental Intervention.

Section - C

3) Prevention of Drug Abuse:

1) Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.

2) School

Counselling, Teacher as role-model. Parent-Teacher-Health Professional Coordination, Random testing on students.

Section - D

Prevention of Drug Abuse:

- 3) Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and awareness program.
4. Legislation: NPDs act, Statutory warnings, Policing of Borders, Checking Supply/Smuggling of Drugs, Strict enforcement of laws, time bound trials

References:

1. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
2. Inciardi, J.A. 1981. *The Drug Crime Connection*. Beverly Hills: Sage Publications.
3. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
4. Sain, Bhim 1991, *Drug Addiction Alcoholism, Smoking obscenity* New Delhi: Mittal Publications.
5. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab: A Sociological Study*. Amritsar: Guru Nanak Dev University.
6. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*. Delhi: Shipra.
7. World Drug Report 2011, United Nations office of Drug and Crime.
8. World Drug Report 2010, United Nations office of Drug and Crime
9. <http://swayam.gov.in>
10. <http://edx.org> (formerly <http://mooc.org>)