FACULTY OF ENGINEERING & TECHNOLOGY

SYLLABUS

FOR

B.Sc. Internet & Mobile Technologies
(Semester: I – VI)

Session: 2019-20

GURU NANAK DEV UNIVERSITY
AMRITSAR

Note:  
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   Defaulters will be prosecuted.

(ii) Subject to change in the syllabi at any time.  
    Please visit the University website time to time.
# Semester System

(B.Sc. (Internet and Mobile Technologies) Semester System
(Four Years Degree Course)

## Semester – I:

<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Paper Name</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMT-101</td>
<td>Object Oriented Concepts and C++</td>
<td>75</td>
</tr>
<tr>
<td>IMT-102</td>
<td>Data Structures</td>
<td>75</td>
</tr>
<tr>
<td>IMT-103</td>
<td>Concepts of Computer Science</td>
<td>75</td>
</tr>
<tr>
<td>IMT-106</td>
<td>Practical – Based on Data Structures and C++</td>
<td>50</td>
</tr>
<tr>
<td>IMT-107</td>
<td>Practical – Based on SQL</td>
<td>50</td>
</tr>
<tr>
<td>IMT-104</td>
<td>Communication Skills in English – I</td>
<td>50</td>
</tr>
<tr>
<td>IMT-105</td>
<td>Punjabi (Compulsory) / **ਪੰਜਾਬੀ ਪੰਜਾਬੀ / ** Punjabi History &amp; Culture (From Earliest Times to C 320)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>* Drug Abuse: Problem, Management and Prevention (Compulsory Paper)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td><strong>Total Marks:</strong></td>
<td><strong>425</strong></td>
</tr>
</tbody>
</table>

## Semester – II:

<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Paper Name</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMT-201</td>
<td>Scripting Languages</td>
<td>75</td>
</tr>
<tr>
<td>IMT-202</td>
<td>Web Designing</td>
<td>75</td>
</tr>
<tr>
<td>IMT-203</td>
<td>Fundamentals of PHP</td>
<td>75</td>
</tr>
<tr>
<td>IMT-204</td>
<td>Internet and E-Commerce</td>
<td>75</td>
</tr>
<tr>
<td>IMT-207</td>
<td>Practical – Based on PHP and Scripting Languages</td>
<td>50</td>
</tr>
<tr>
<td>IMT-208</td>
<td>Live Working Project</td>
<td>50</td>
</tr>
<tr>
<td>IMT-205</td>
<td>Communication Skills in English – II (Th.35+Pra.15)</td>
<td>50</td>
</tr>
<tr>
<td>IMT-206</td>
<td>Punjabi (Compulsory) / **ਪੰਜਾਬੀ ਪੰਜਾਬੀ / ** Punjabi History &amp; Culture (C 320 TO 1000 B.C.)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>* Drug Abuse: Problem, Management and Prevention (Compulsory Paper)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td><strong>Total Marks:</strong></td>
<td><strong>500</strong></td>
</tr>
</tbody>
</table>

Note: * Marks of this Paper will not be included in the Total Marks.
  ** (Special Paper in lieu of Punjabi Compulsory)
  (For those students who are not domicile of Punjab)
## SEMESTER – III:

<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Paper Name</th>
<th>Total marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMT-301</td>
<td>Java and Android Programming</td>
<td>75</td>
</tr>
<tr>
<td>IMT-302</td>
<td>Open Source Technologies</td>
<td>75</td>
</tr>
<tr>
<td>IMT-303</td>
<td>Advanced PHP</td>
<td>75</td>
</tr>
<tr>
<td>IMT-304</td>
<td>Practical Based Java and Android Programming</td>
<td>75</td>
</tr>
<tr>
<td>IMT-305</td>
<td>Project Based on Advanced PHP and CMS (Content Management System)</td>
<td>100</td>
</tr>
</tbody>
</table>

**Total Marks:** 400

## SEMESTER – IV:

<table>
<thead>
<tr>
<th>Paper No.</th>
<th>Paper</th>
<th>M. Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMT-401</td>
<td>Cloud and Mobile Computing</td>
<td>75</td>
</tr>
<tr>
<td>IMT-402</td>
<td>Mobile Application Designing</td>
<td>75</td>
</tr>
<tr>
<td>IMT-403</td>
<td>Mobile Application Development (iOS)</td>
<td>75</td>
</tr>
<tr>
<td>IMT-404</td>
<td>E-Commerce and Prestashop</td>
<td>75</td>
</tr>
<tr>
<td>IMT-405</td>
<td>Software Engineering and Testing</td>
<td>75</td>
</tr>
<tr>
<td>IMT-406</td>
<td>Project work based on Mobile Application Designing (iOS)</td>
<td>75</td>
</tr>
<tr>
<td>ESL-221</td>
<td>* Environmental Studies (Compulsory)</td>
<td>100</td>
</tr>
</tbody>
</table>

**Total Marks:** 450

* Marks of Paper EVS will not be included in Grand Total.
B.Sc. (Internet and Mobile Technologies) Semester System
(Four Years Degree Course)

SEMESTER – V:

<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Paper Name</th>
<th>Total marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMT-501</td>
<td>Game Development</td>
<td>75</td>
</tr>
<tr>
<td>IMT-502</td>
<td>Advanced Programming in Android</td>
<td>75</td>
</tr>
<tr>
<td>IMT-503</td>
<td>Big Data and Analytics</td>
<td>75</td>
</tr>
<tr>
<td>IMT-504</td>
<td>Practical based on Game Development</td>
<td>50</td>
</tr>
<tr>
<td>IMT-505</td>
<td>Practical – Based on Android Application Development</td>
<td>75</td>
</tr>
<tr>
<td>IMT-506</td>
<td>Practical – Hadoop, MapReduce, HDFS, MongoDB</td>
<td>50</td>
</tr>
</tbody>
</table>

Total Marks: 400

SEMESTER – VI:

<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Paper Name</th>
<th>Total marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMT-601</td>
<td>Industrial Training Based on Mobile and Web Based Technology</td>
<td>400</td>
</tr>
</tbody>
</table>

Total Marks: 400
IMT-101: Object Oriented Concepts and C++

Time: 3 Hours  Max. Marks: 75

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

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

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

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

References:
1. Designing Object Oriented Software Rebacca Wirfs - Brock Brian Wilerson, PHI.
IMT-102: Data Structures

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A
Preliminaries: Various data structures, common operations on data structures, algorithm complexity, big O notation, time-space tradeoff between algorithms.
Arrays: Arrays defined, representing arrays in memory, various operations on linear arrays, Multi-dimensional arrays, Records.
Linked Lists: Types of linked lists, representing linked lists in memory, advantage of using linked lists over arrays, various operation on linked lists.

SECTION–B
Stacks: Description of stack structure, implementation of stack using arrays and linked lists. Applications of stacks - converting arithmetic expression from infix notation to polish and their subsequent evaluation, Quicksort technique to sort an array.
Queues: Description of queue structure, implementation of queue using arrays and linked lists, description of priorities queues. Applications of queues - Operating system simulations.

SECTION–C
Trees: Description of tree structure and its terminology, binary search tree, implementing binary search tree using linked lists, various operations on binary search trees.
Heaps: Description of heap structure, implementing heaps using arrays, various operations on heaps, Applications of heaps – Heapsort technique to sort an array, implementation of priority queues.

SECTION–D
Graphs: Description of graph structure, implementing graphs in memory using adjacency matrix or adjacency lists, various graphs transversing algorithms, finding shortest path between two nodes, Dijkstra’s shortest path algorithm.
Searching and Sorting: Linear Search, Binary search, Bubble Sort, Selection Sort, Insertion Sort, Merge Sort.
Hash Tables: Direct address tables, hash tables, collision resolution by chaining, hash functions, open addressing – linear probing, quadratic probing, double hashing.

Reference:
IMT-103: Concepts of Computer Science

Time: 3 Hours  Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A
Basic Concepts: History & Evolution of Operating System, OS as resource manager, Various views of OS.
Memory Management: Basic Memory management Schemes, Partition memory management, demand paged memory management, segmented memory management, swapping, hierarchy of memory.

SECTION–B
Process Management: States of Processes, process scheduling, race conditions, deadlocks, banker’s algorithm, precedence graphs, semaphores, monitors.

SECTION–C
Basic Concepts of Database Management (Database, Database System, why database, Data independence) an architecture for a database system (levels of the architecture, mappings, DBA, client/server architecture) Introduction to Relational db systems.
ER Model: Overview, ER diagrams, Database design using ER model.

SECTION–D
The Relational Model: Relational Data Objects: Domains and relations, Integrity Constraint, SQL Language. Working knowledge of DDL, DML and DCL based statements for generating queries is to be provided.
Relational Database Design: Concepts of functional dependencies, multivalued dependencies, 1NF, 2NF, 3NF, BCNF, Higher Normal Forms.

References:
B.Sc. (Internet and Mobile Technologies) (Semester – I)
(Three Years Programme)

IMT-106: Practical – Based on Data Structures and C++

Marks: 50
IMT-107: Practical – Based on SQL

Marks: 50
IMT-104: COMMUNICATION SKILLS IN ENGLISH – I

Time: 3 Hours
Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

The syllabus is divided in four sections as mentioned below:

Section–A
Reading Skills: Reading Tactics and strategies; Reading purposes–kinds of purposes and associated comprehension; Reading for direct meanings.

Section–B
Reading for understanding concepts, details, coherence, logical progression and meanings of phrases/expressions.

Activities:
• Comprehension questions in multiple choice format
• Short comprehension questions based on content and development of ideas

Section–C
Writing Skills: Guidelines for effective writing; writing styles for application, personal letter, official/business letter.

Activities:
• Formatting personal and business letters.
• Organising the details in a sequential order

Section–D
Resume, memo, notices etc.; outline and revision.

Activities:
• Converting a biographical note into a sequenced resume or vice-versa
• Ordering and sub-dividing the contents while making notes.
• Writing notices for circulation/boards

Recommended Books:
• Oxford Guide to Effective Writing and Speaking by John Seely.
• English Grammar in Use (Fourth Edition) by Raymond Murphy, CUP
B.Sc. (Internet and Mobile Technologies) (Semester – I)
(Three Years Programme)

IMT-105: प्रत्याशिकी (सप्ताही)

अंक: 3 पंक्तियाँ

बल-बीमा आउटबल-पूर्णता

मैवमत-ढे

अमर अर्जुन (बहुत अलग)
(ध-ध-ध-ध-ध-ध-ध-ध)
बहुत तथ्य रेखा पूरीतिविभक्ति, अभिकृतमत।
(धूम्र पाया मार दिशाप्रणाली, मध्)

मैवमत-ढी

ंदिवसवार पाने (ंदिवसवार लेख-मंचाधी)
मूल: म.म.मैलिय, ध-ध-ध-ध-ध-ध-ध-ध
पृष्ठांश माध्यम पूर्णता. तथ्यालान। (धेक्ष 1 ते 6)
(किंचिंप त-धन, लिपट-धली)

मैवमत-मी

(क) पेट्जा बुनना
(अ) पेट्जा घड़िया पे पृष्ठांश दे धुंडत।

मैवमत-ढी

(क) पृष्ठांश पत्री धुंड: धुंडत धेक्ष, धुंडत धेक्ष धेक्ष के दिशामां, मध्, दिशामां, मूर्त-पूर्णता।
(अ) धारा स्थलांश: धारा स्थलांश सध-धारा स्थलांश सा धेक्ष, पृष्ठांश धुंडान पे पाहिजा-धुंडा।

अंव-धंड अउ ध्यानबाध तिद्धी उटानीतुटः

1. पृष्ठांश पैंड के पचत धना धक्को। उत्तर धना धिरे के पृष्ठांश पैंड के पचतो।
2. धुंडानापूर्णता के धंड पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश पृष्ठांश प
B.Sc. (Internet and Mobile Technologies) (Semester – I)  
(Three Years Programme)

**IMT-105: ਪੰਜਾਬੀ ਪ੍ਰਿਜ਼ਾਂ**  
(In lieu of Compulsory Punjabi)

**ਸੂਚ ਅਤੇ ਕੁਝ ਮੁੱਢਲਿਆਂ**

**ਕੋਟਿਵਨਾ ਭਾਸ਼ਾ ਸਪੈਡਰ**

- ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਅੰਦਰੂਣ ਭਾਸ਼ਾ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਇਕ ਇੰਟਰਨੀਟ ਅਤੇ ਮੌਲੀ ਖ਼ਤਮ ਬੇਰੇਖਾਂ (ਪੰਜਾਬੀ ਮੌਲੀ ਖ਼ਤਮ)
- ਸ਼ੁਭਾਬਦਾ (ਪੰਜਾਬੀ, ਪੰਜਾਬੀ, ਅੰਦਰੂਣ) : ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਇੰਟਰਨੀਟ

**ਸੂਚਿਵਨੀ ਸਪੈਡਰ**

- ਪੰਜਾਬੀ ਮੌਲੀ ਸਟੇਟਡਰ : ਪੰਜਾਬੀ ਮੌਲੀ ਸਟੇਟਡਰ
  (ਸ਼ੁਭਾਬਦਾ ਮੌਲੀ, ਮੌਲੀ ਮੌਲੀ, ਭਾਸ਼ਾ ਮੌਲੀ, ਭਾਸ਼ਾ ਮੌਲੀ, ਅੰਦਰੂਣ ਅਤੇ ਹੈਪੁਟਰ)

**ਸੂਚਿਵਨੀ ਮੁਢਲਿਆਂ**

- ਹਿੰਦੂ ਮੁਢਲਿਆਂ ਦੀ ਸੂਚਿਵਨੀ ਮੁਢਲਿਆਂ : ਖ਼ਤਮ, ਖ਼ਤਮ, ਖ਼ਤਮੀ-ਰੂਦਾਏ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਇਕ ਮੌਲੀ ਭਾਸ਼ਾ ਤਾਲ ਸਕੇਡ

**ਸੂਚਿਵਨੀ ਮੁਢਲਿਆਂ**

ਉਹ ਦੇ ਮੁੱਚ ਦਿਖਾਂ ਦੇ ਲਾਂ, ਬਾਲਾਂ ਭਾਵਣਾਂ ਦੇ ਲਾਂ, ਹੁੰਡੇ ਦੇ ਲਾਂ, ਹਾਲ ਦੇ ਲਾਂ, ਹੀਮਾ ਦੇ ਲਾਂ ਜੋ ਇਕ ਦੇ ਲਾਂ ਮਤ ਸਕੇਡ

**ਜੀਵਨ-ਦੌੜ ਅਤੇ ਜਹਾਨਵਾਂ ਜਹਾਨਵਾਂ ਸਕਟੀ ਉਠਾਕਾਂ**

1. ਪ੍ਰਸ਼ਟ ਪੂਰਵ ਦੇ ਬਣ ਸਟਸ ਦੇਖਨਾ। ਉਹ ਸਟਸ ਦੀਆਂ ਦੀ ਪ੍ਰਸ਼ਟ ਪੂਰਵ ਸਕਟੀ।
2. ਹੀਸਣਾਥ ਦੇ ਬੁੱਧ ਪ੍ਰਸ਼ਟ ਕਰਨਾ ਉਠਾ। ਉਹ ਕੰਛ ਦੀਆਂ ਦੀ ਹੀਸਣਾਥ ਸਕਟੀ।
3. ਅਖੇਰ ਪ੍ਰਸ਼ਟ ਦੇ ਠਾਂਛਲ ਅਖਰ ਉਠਾ।
4. ਪ੍ਰਸ਼ਟ ਦੈਰਾ ਕਰਨਾ ਕਰਨਾ ਉਹ ਪ੍ਰਸ਼ਟ ਦੀ ਦੌੜ ਬਣਾਈ। ਇੱਕ ਉਹ ਕੰਨਾ ਕਰਨਾ ਪ੍ਰਸ਼ਟ ਦੀ ਹੀਸਣਾਥ ਸਕਟੀ।
B.Sc. (Internet and Mobile Technologies) (Semester – I)
(Three Years Programme)

IMT-105: Punjab History & Culture (From Earliest Times to C 320)
(Special Paper in lieu of Punjabi Compulsory)
(For those students who are not domicile of Punjab)

Time: 3 Hours
Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Section–A**
1. Physical features of the Punjab and its impact on history.
2. Sources of the ancient history of Punjab

**Section–B**
3. Harappan Civilization: Town planning; social, economic and religious life of the Indus Valley People.

**Section–C**
5. Social, Religious and Economic life during *Rig Vedic Age*.

**Section–D**
7. Teachings and impact of Buddhism
8. Jainism in the Punjab

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

PROBLEM OF DRUG ABUSE

Time: 3 Hours
Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section – A

Meaning of Drug Abuse:

Section – B

Consequences of Drug Abuse for:
Individual : Education, Employment, Income.
Family : Violence.
Society : Crime.
Nation : Law and Order problem.

Section – C

Management of Drug Abuse:
Medical Management: Medication for treatment and to reduce withdrawal effects.

Section – D

Psychiatric Management: Counselling, Behavioural and Cognitive therapy.
Social Management: Family, Group therapy and Environmental Intervention.
References:

IMT-201: Scripting Languages

Time: 3 Hours

Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A
The Web: Historical Perspective of HTTP, Uniform Resource Locator, Request-Response paradigm, Statelessness, Request Methods with Status Codes, Structure of HTTP Message: Content Types, caching control, security, session support; Virtual Hosting, Caching Support and Persistent Connections.

SECTION–B
Client Side Script: Scripting Language variables, functions, conditions, Objects; DOM, Data Validation, Web browser Configuration, Comparison of Client Side Scripting Languages.
Browser Languages:
XHTML: Forms, Frames, Tables etc.
DHTML: Cascading Style Sheets, Object Model, Event Model, Filters and Transitions, Data Controls, Handling of Multimedia Data.

SECTION–C
Overview of Server Side Script:

References:
IMT-202: Web Designing

Time: 3 Hours

Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Introduction to Dreamweaver CS4

Creating Your First Website
Set up a New Site, Creating a Root Folder, Adding Text on a Page, Formatting Text, Paragraphs, Line Breaks, Fonts, Color, Formatting Paragraphs, Creating Lists, Increase and Reduce Indentions, Insert Special Characters, Images, Inserting Images, Add White Space around Images, Align Images, Add Border to an Image, Crop an Image, Resizing Images, Create Image Placeholders, Creating Links, Text Links, Make an Image a Clickable Link, Make a Clickable, Image that Enlarges When Clicked, Create an Email Link, Create Anchors and Jump Links

Designing with Tables
Setting Up a New Site, Creating Tables, Setting Table Properties and the Properties Inspector, Placing Images and Graphics Into Tables, Adding a Background Color, Using Tracer Images in to Design a Website
Creating a Site Using a Template
Browsing Templates, Creating Your Website From a Template, Adding Images, Changing Background Colors, Create a Template from an Existing Site, Setting Editable and Uneditable Regions, Nested Templates

SECTION–B

Creating Online Forms
Form Basics, Creating a Basic HTML Form, Validation, Create Hints for Text Fields, Block Invalid Characters, Add a Validated Text Field, Add a Text Area, Add Checkboxes, Adding Radio Buttons, Adding List Menus, Creating a Submit Button
Libraries, Assets, and More Time Saving Tools
Creating Library Items, Insert a Library Item into a Document, Edit a Library Item, The Assets Panel, The Find and Replace Command, Check Spelling,
Creating a Website with Frames
Creating Frames and Framesets, Creating a Predefined Frameset, Design Your Own Frameset, Resize a Frame, Open a Document in a Frame, Save Framesets and Frames, Create a Scroll Bar, When to Use Frames
Rollovers and Other Image Tricks, Drawing Image Maps,

SECTION–C
Designing with Cascading Style Sheets
Creating Style Sheets, CSS Code Format, The CSS Styles Panel and Editing Styles, External Style Sheets, Applying Existing External Style Sheets, Working with Predefined Styles, Adding Additional Rules, Creating a New Class Style, Creating a New ID, Edit a Rule, CSS Layout
Creating Precise Designs Using AP Elements
Behaviors
Using the Behaviors Panel, Applying and Changing Behaviors, Changing Behaviors, Create a Pop Up Window, Create Status Bar Text, Assign Behaviors to an Image Map
Adding Audio, Video & Flash to a Page

SECTION–D
Embedding vs. Linking, Working with Flash Embedding SWF Files into a Dreamweaver Document Exploring the Flash Properties Inspector, Additional Properties, Embedding FLV Files in Dreamweaver Documents, Progressive Download Video Options, Streaming Video Options, Windows Media, QuickTime, and Other Video Formats, Adding Audio to a Page.
Working in the Code
Publishing & Managing Your Website
Setting up the Server Information for FTP, The File Panel Options and Viewing Remote Files, Transferring Files To and From a Server, Getting Files, Putting Files, Working with the Synchronize Buttons, Enable Cloaking, Activating Collaborative Features, Working with Design Notes, Enabling Design Notes, and Creating Design Notes.
B.Sc. (Internet and Mobile Technologies) (Semester – II)
(Three Years Programme)

IMT-203: Fundamentals of PHP

Time: 3 Hours
Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

PHP Introduction:
A Brief History of PHP - Installing PHP - A Walk Through PHP - Installing and Configuring PHP on Windows.

Language Basics:
Lexical Structure - Data Types - Variables - Expressions and Operators – Constants - Flow-Control Statements - Including Code - Embedding PHP in Web Pages

SECTION–B

Functions:

Strings:

SECTION–C

Arrays:

Objects:
Terminology - Creating an Object - Accessing Properties and Methods - Declaring a Class - Introspection – Serialization

Extending PHP:
SECTION-D

Architectural Overview - What You’ll Need - Building Your First Extensions - The config.m4 File - Memory Management - The pval / zval Data Type - Parameter Handling - Returning Values - References - Global Variables - Creating Variables - Extension INI Entries – Resources.

Reference:

1. Programming PHP Rasmus Leadoff and Levin Tatroe O'Reilly Publications.
IMT-204: Internet and E-Commerce

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

SECTION–B
Internet Addresses, The Domain Name System, Client-Server Model, Port Numbers, Implementations and Application Programming Interface. Electronic Communication, PCs and Networking, E-mail, Internet and intranets.

SECTION–C
EDI to E-commerce, EDI, UN/EDIFACT

SECTION–D
Protocols for Transactions. SSL-Secure Socket Layer, SET-Secure Electronic Transaction, Credit Card Business
Electronic Commerce providers. CyberCash, Digicash, VeriSign

References:
2. Forouzon Behrouz: Data Communications, Tata McGraw Hill.
IMT-207: Practical – Based on PHP and Scripting Languages

Marks: 50
B.Sc. (Internet and Mobile Technologies) (Semester – II)
(Three Years Programme)

IMT – 208: Live Working Project

Marks: 50
PAPER: COMMUNICATION SKILLS IN ENGLISH – II

Time: 3 Hours

Max. Marks: 50
Theory Marks: 35
Practical Marks: 15

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Course Contents:

SECTION–A
Listening Skills: Barriers to listening; effective listening skills; feedback skills.
Activities: Listening exercises – Listening to conversation, News and TV reports

SECTION–B
Attending telephone calls; note taking and note making.
Activities: Taking notes on a speech/lecture

SECTION–C
Speaking and 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: 1) Making conversation and taking turns
           2) Oral description or explanation of a common object, situation or concept

SECTION–D
The study of sounds of English,
Stress and Intonation,
Situation based Conversation in English,
Essentials of Spoken English.
Activities: Giving Interviews

PRACTICAL / ORAL TESTING

Marks: 15

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 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.

Note: Oral test will be conducted by external examiner with the help of internal examiner.
PAPER: ਪੇਸ਼ਕਸ਼ (ਕਨਕਾ ਨਾਈ)

ਸੌਂ: 3 ਪੇਟੀ 

ਪਾਠ-ਲਖਣ ਅਤੇ ਪਾਠ-ਪ੍ਰਾਪਤਵਾਨ

ਮੇਲਮੁਤ-ਦੇ

ਆਸਮਾਨ ਅਸ਼ਾਜ (ਹਾਰੀ ਬਾਜਾ).
(ਸੁਦੀਰਚਤ ਖੱਬੇ ਅਤੇ ਦਿਸ਼ਾਵਾਨ ਨੈਤਿਕ ਮੰਤ ਵੇਦੇ)
ਕਾਨ ਨਾਲ ਦ੍ਰਿਸ਼ੀ ਤੂਨੀਏਟਵੇਟੀ, ਅਧਿਕਾਰਤ।
(ਖਿਸ਼-ਦੋਸਤੁ, ਪਾਣੀ ਹਿਉਲਾਟ)

ਮੇਲਮੁਤ-ਦਿਲ

ਦੀਵਿਗਤਵਾਨ ਜਾਂ (ਦੀਵਿਗਤਵਾਨ ਖੇਤੀ-ਸੀਟਦਵਾਰੀ)
ਸੁਦੀਰਚਤ ਮੰਤ ਵਜ਼ਤਦ,
ਪੇਸ਼ਕਸ਼ ਸਾਹਿਬ ਮੁਤਮਿਸ਼, ਖੁਕੀਏਟ। (ਖੇਤੀ 7 ਤੋਂ 12)
(ਜ਼ੂਬਾ, ਕਲਾ ਸੇਲੀ)

ਮੇਲਮੁਤ-ਸੀ

(ਦੋ) ਸਾਧਨ-ਸਮਵਾਦ ਅਤੇ ਸਾਧਨ ਉਤਰਤ: ਪਾਲਿਕਾ, ਮੰਡਲੀ ਮੇਲਮੁਤ
(ਪ੍ਰ) ਰਾਜ ਗਿੱਤਾ

ਮੇਲਮੁਤ-ਬੇਠ

(ਦੋ) ਸਾਧਨ ਉਤਰਤ
(ਪ੍ਰ) ਭੁਲਬਾਤੇ ਅਦਾ ਅਭਾਲ

ਸੌਂ-ਜੈਦ ਅਦਾ ਸਭਿਤਵਾਲ ਤਹਿ ਉਤਰਪ੍ਰਕਾਰਾਂ

1. ਪ੍ਰਸੂ ਬੇਚਣ ਦੇ ਨਾ ਖਾਰਚ ਟੋਟੀ। ਉਹ ਖਾਰਚ ਦੱਖਣ ਦੇ ਪ੍ਰਸੂ ਪੁੱਖ ਸਰਦੀ।
2. ਹੀਤਿਕਾਰਕੀ ਦੇ ਬੇਚ ਪ੍ਰਸੂ ਪੁੱਖ ਬਚਾਉਣ ਦੇ। ਉਹ ਖਾਰਚ ਦੱਖਣ ਦੇਖ ਪ੍ਰਸੂ ਸਾਹਿਬੀ
   ਹੋ। ਪੇਸ਼ਕਸ਼ ਪ੍ਰਸੂ ਦੀ ਖਾਰਚ ਦੱਖਣ ਦੀ ਬੀਜ ਨਾ ਸਰਦੀ ਦੇ।
3. ਪ੍ਰਤਵ ਪ੍ਰਸੂ ਦੇ ਬਚਾਉਣ ਅਤੇ ਉਠਾ।
4. ਪੇਹਲਾ ਮੈਂ ਕ੍ਰ ਦੇ ਹੀਤ ਟੇਲੀ ਸੇਵਾ ਕਰ ਹੋ ਅਵਾਂ ਪ੍ਰਸੂ ਦੀ ਟੇਲ ਦੇ ਟੇਲ ਖਾਰ
   ਖੇਤ-ਪ੍ਰਸੂ ਦੀ ਖਾਰਚ ਦੇ।
PAPER: ਭਾਸ਼ਾ ਪ੍ਰਬੰਧ
(In lieu of Compulsory Punjabi)

ਸਮੂਹ: 3 ਜੋਟੇ

ਭਾਸ਼ਾ-ਚੁਣਾ

ਮੁੱਖ ਅਕਲ

ਮੁੱਖ ਮੂੰਹਾਂ: ਪ੍ਰਤਿਵੇਧਕ ਅਦਾਕਾਰੀ
(ਤਾਰੀਖ, ਪਹਿਲਾਵਾਂ, ਵਿਕਲਪਾ, ਹਿਸਾਬਾਟ, ਵਿਕਲਪਾ ਹਿਸਾਬਾਟ, ਮੰਨੀ ਅਤੇ ਹਿਸਾਬਾਟ)

ਮੁੱਖ ਹਰ ਦਿਨ

ਪ੍ਰੋਸਕੁਲਾਂ ਜ਼ਿਲਾ ਪ੍ਰਬੰਧ: ਪ੍ਰੋਸਕੁਲਾਂ ਨਾਲ-ਪ੍ਰਬੰਧ
(ਇ) ਸਮਾਂ ਦੇਵਾਂ, ਮੂਲਮ ਦੇਵ ਅਦਾਕਾਰ ਹਿਸਾਬਾਟ ਦੇਵ (ਪ੍ਰਤਿਵੇਧਕ ਅਦਾਕਾਰ ਦੇਵ)
(ਅ) ਵਿਕਲਪਾ ਦੇਵ, ਪ੍ਰਮਾਣਵਾਦ ਦੇਵ ਅਦਾਕਾਰ ਦੇਵ (ਪ੍ਰਤਿਵੇਧਕ ਅਦਾਕਾਰ ਦੇਵ)

ਮੁੱਖ ਹਰ ਦਿਨ

ਪੜ੍ਹੁੰਕ ਹਰ ਦਿਨ

ਸੰਭਾਲ ਹਰ ਦਿਨ

ਅੱਠਸਾਂ ਅਦਾਕਾਰ ਕਹਾਣੀ ਉਪਾਧਿਆਂ

1. ਪ੍ਰਮਾਣ ਪ੍ਰਬੰਧ ਦੇ ਵਾਂਚ ਜਰਵਾ ਦੇਖੋ। ਉਹ ਜਰਵਾ ਦੀਚੀ ਦੇ ਪ੍ਰਮਾਣ ਪ੍ਰਤੀਕ ਦੇਖੋ।
2. ਵਿਕਲਪਾਂ ਦੇ ਵਰਤੇ ਪ੍ਰਮਾਣ ਵਾਂਚ ਵਾਂਚੋ। ਉਹ ਜਰਵਾ ਦੀਚੀ ਹਿਜ਼ ਪ੍ਰਮਾਣ ਸਰਪ੍ਰਵਾਰਿਤ ਹੈ।
   ਪ੍ਰਮਾਣ ਪ੍ਰਮਾਣ ਵਿਕਲਪ ਦੀ ਜਰਵਾ ਦਾਖਲ ਤੀਜਾ ਮਲਕਾ ਹੈ।
3. ਪ੍ਰਸਵੀ ਪ੍ਰਮਾਣ ਦੇ ਵਰਤੇ ਅਦਾਕਾਰ ਵਾਂਚੋ।
4. ਪ੍ਰਸਵੀ ਪ੍ਰਮਾਣ ਦੇ ਵਰਤੇ ਅਦਾਕਾਰ ਵਾਂਚੋ। ਉਹ ਪ੍ਰਮਾਣ ਦੀ ਟੈਸਟ ਅਦਾਕਾਰ ਵਾਂਚ ਵਾਂਚੋ। ਪ੍ਰਮਾਣ ਦੀ ਹਿਜ਼ ਪ੍ਰਮਾਣ
   ਹਿਜ਼ ਬਾਲ ਸਰਪ੍ਰਵਾਰਿਤ ਹੈ।
PAPER: Punjab History & Culture (C 320 to 1000 B.C.)
(Special Paper in lieu of Punjabi compulsory)
(For those students who are not domicile of Punjab)

Time: 3 Hours  
Max. Marks: 50

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section–A
1. Alexander’s Invasion and its Impact
2. Punjab under Chandragupta Maurya and Ashoka.

Section–B
3. The Kushans and their Contribution to the Punjab.
4. The Panjab under the Gupta Empire.

Section–C
5. The Punjab under the Vardhana Emperors
6. Socio-cultural History of Punjab from 7th to 1000 A.D.

Section–D
7. Development of languages and Education with Special reference to Taxila
8. Development of Art & Architecture

Suggested Readings:
1. L. M Joshi (Ed), History and Culture of the Punjab, Art-I, Punjabi University, Patiala, 1989 (3rd Edition)
PAPER: DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
(COMPELLSORY PAPER)

DRUG ABUSE: MANAGEMENT AND PREVENTION
Time: 3 Hours
Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section – A
Prevention of Drug abuse:
Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.

Section – B
School: Counselling, Teacher as role-model. Parent-teacher-Health Professional Coordination, Random testing on students.

Section – C
Controlling Drug Abuse:
Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and awareness program

Section – D
References:

2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and
   Publication.
   Epidemiological Unit, All India Institute of Medical Sciences, 2004.
   Publications.
   Publications.
    Guru Nanak Dev University.
11. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi:
    Shipra.
    Cambridge University Press.
13. Verma, P.S. 2017, “*Punjab’s Drug Problem: Contours and Characteristics*”, Economic and
IMT-301: JAVA AND ANDROID PROGRAMMING

Time: 3 Hours
Max Marks: 75

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

The student can use only Non-programmable & Non-storage type Calculator.

Section A

Introduction to Android and Java:
Installing Android, Creating Hello World, Running on Emulator, Introduction to Java Data types, Loops, Conditionals and Operators.

Android Architecture and OOPS:
Building Blocks of Android, Java Classes and Objects, Class Methods and Instances, Inheritance and Polymorphism in Java, Interface and Abstract class

Section B

Android UI and Advance Java:
Using resources, Using themes, Debugging Android Code, Settings, Java I/O, Threads and Synchronization

Android Graphics and Multimedia:
Basic Graphics, Input Handling, Playing Audio, Playing Video

Section C

Persistence in Android:
Accessing Internal Files system, Accessing SD cards, Introduction to SQLite, Data Binding Content Provider

Network Awareness:
Accessing the Internet, Using Web services, Using Java and Java Script, Location Sensing

Section D

3D graphics in OpenGL and other views:
OpenGL Introduction, Using Threads and Models, Texture in OpenGL, Making a application in OpenGL, Other standard views in Android

Widgets and the way ahead:
Android Widget Development, The Path Ahead for Android, Running Application on device, Android Market Some Do’s and Don’ts, Introduction to System programming in Android

Reference Books:
1. Learn Java for Android Development, Author: Jeff Friesen, Publisher: Apress (2010)
5. Sams Teach Yourself Java in 21 Days (Covering Java 7 and Android) 0006 Edition, Author: Rogers Cadenhead, Publisher: Sams (2012)
IMT-302: OPEN SOURCE TECHNOLOGIES

Time: 3 Hours
Max Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.
The student can use only Non–programmable & Non–storage type Calculator.

Section A
Introduction to Open Source Software
History and Emergence of Open Source Software, Community Building, Open Standards, Open Source Licenses.

Introduction to Linux Operating System

Section B
Linux System Administration

Section C
Linux Web Server
Overview of web Server, System Specifications for Web and FTP Server Installation procedures, Configuration settings, Start/Stop the servers, testing the servers, track of logs, Performance Tuning of servers. Apache HTTP Server and its flavors. WAMP server (Windows, Apache)

Section D
Content Management System

Reference Books:
3. Joomla Bible Author: Ric Shreves, Publisher: Wiley India Pvt. Ltd. (2011)
4. Drupal 7 Bible, Author: Ric Shreves, Brice Dunwoodie, Publisher: Wiley India Pvt. Ltd. (2011)
Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.
The student can use only Non-programmable & Non-storage type Calculator.

Section A

Beginning with CakePHP:
What is CakePHP, Understanding Model-View-Controller, Basic Principles of CakePHP, CakePHP Structure, A Typical CakePHP Request, CakePHP Folder Structure, CakePHP Conventions, File and Classname Conventions, Model and Database Conventions, Controller Conventions, View Conventions,

Developing with CakePHP:
Installation, Configuration, Controllers, Components, Models, Behaviors, DataSources, Views, Helpers, Scaffolding, Global Constants and Functions, Vendor Packages, Data Validations, Pagination

Core Components & Helpers:
Access Control List, Authentication, Cookies, Email, Authentication, Ajax, Form, HTML, JavaScript, Paginator, Session, Text.

Section B

CakePHP Application:
Creating the Blog database, Cake Database Configuration, Create a Post Model, Create a Posts Controller, Creating Posts Views, Adding Posts, Data Validation, Deleting Posts, Editing Posts, Routes.

Installing WordPress:
Creating a Database, Installing WordPress, Installing Themes, Downloading a Theme from the, WordPress Dashboard, Manually Installing a Theme, Adding Custom Header with Theme Name, Author, etc.

Setting Up Your WordPress.com Account:
Creating an Account on WordPress or at your own website/localhost, Logging Into Your Account, Writing Your First Post with little explanation, Customizing Your Account, Personal Settings, General Settings

Section C

Changing Themes (How the Blog Looks)
Widgets, Editors, Writing Posts, Adding a Post, Using the Visual Editor, Adding Hyperlinks, Categories, Tags, & Reading/Writing Settings, Using Categories and Tags, Managing Categories and Tags, Controlling the Number of Posts That Are Displayed, Understanding Comments, Managing and Moderating Comments, Trackbacks and Pingbacks
Making Pages
Adding and Deleting a Page, Pasting from Text Files, Changing the Page Order, Adding and Managing Media, Adding a Photo, Adding a Video, Adding Other Content (.pdf, .doc, etc.), Managing Uploaded Content, Media Settings, Working with Links, Adding Links, Managing Links

Section D
Appearance Customization
Changing the Header Image, Customizing the Sidebar with Widgets, Previewing Custom Fonts, Using the Dashboard, Managing Recent Comments, Tracking Statistics, Customizing the Dashboard’s Appearance, Installing some important plugins,

SEO Ultimate
Fast Secure Contact Form, Efficient Related Posts, Wordpress Backup to dropbox, WP-DB-Backup, WP-Polls, WP Survey and Quiz Tool, Subscribe to comments, Share button by lockerz Statpress Visitors, Google XML sitemaps, Social Login, First Visit Message

Reference Books:
2. HTML5 Black Book: Covers Css3, Javascript, XML, XHTML, Ajax, PHP And Jquery (With CD), Author: Kogent Learning Solutions Inc., Publisher: Dreamtech Press (2011)
5. CakePHP 1.3 Application Development Cookbook, Author: Mariano Lglesias, Publisher: Packt (2011)
6. Building PHP Applications With Symfony, CakePHP, And Zend, Framework, Author: Bartosz Porebski Karol Przystalski Leszek Nowak, Publisher: Wiley India Pvt Ltd (2011)
8. Professional Wordpress: Design And Development Author: Hal Stern David Damstra Brad Williams, Publisher: Wiley India Pvt Ltd (2010)
IMT-304: PRACTICAL BASED ON JAVA AND ANDROID PROGRAMMING

Max Marks: 75
IMT-305: PROJECT BASED ON ADVANCED PHP and CMS
(CONTENT MANAGEMENT SYSTEM)

Max Marks: 100
IMT-401: Cloud and Mobile Computing

Time: 3 Hours  Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

The student can use only Non–programmable & Non–storage type Calculator.

Section A
Overview of Cloud Computing: What is a cloud, Definition of cloud, Definition of cloud, characteristics of cloud, Why use clouds, How clouds are changing, How clouds are changing, Driving factors towards cloud, Comparing grid with cloud and other computing systems, workload patterns for the cloud, “Big Data”, IT as a service.


Section B
Cloud Service Delivery: Cloud service, Cloud service model architectures, Infrastructure as a service (IaaS) architecture, Infrastructure as a service (IaaS) details, Platform as a service (PaaS) architecture, Platform as a service (PaaS) details, Platform as a service (PaaS), Examples of PaaS software, Software as a service (SaaS) architecture, Software as a service (SaaS) details, Examples of SaaS applications, Trade-off in cost to install versus, Common cloud management platform reference architecture: Architecture overview diagram, Common cloud management platform.

Cloud Deployment Scenarios: Cloud deployment models, Public clouds, Hybrid clouds, Community, Virtual private clouds, Vertical and special purpose, Migration paths for cloud, Selection criteria for cloud deployment.

Section C
Section D

Overview of Mobile Technologies: Anatomy of a mobile device, Survey of mobile devices, applications of mobile computing

Wireless Communication Systems: Cellular Networks, Wireless Networks Standards 2G/2.5G/3G/4G, Geolocation and Global Positioning Systems

Application Environment: Limited Resource Computing, Memory Management, Low power management, Fault Tolerance, Security issues

Future of Mobile Computing – upcoming technologies Pervasive Computing, Location aware services.

Books:
IMT-402: Mobile Application Designing

Time: 3 Hours

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.
The student can use only Non–programmable & Non–storage type Calculator.

Section A
Understanding the Difference Between a Website, a Mobile Website, and an Application
What is a Website?
What is a Mobile Website?

Section B
Creating Our Own Mobile Website!
Create Document in photoshop, Background, Design the Header Adding the Search Option
Add the Body Text
Add the Arrows Next to the Body Text
Optimizing for Web,iPad& iPhone app design techniques Create a Mobile Sample App Interface in Photoshop

Section C
Parallax Website Design
What is Parallax Website Design?
It's an Animation
A Simple Parallax Tutorial

Section D
Creating a Parallax Website from Scratch
ParallaxHTML,css,Javascript
How it works?
Stellar.js Parallax Scrolling Website
Parallax Technologies: jQuery, Stellar.js, Skrollr.js, Jarallax, &CSS

Books and References:
B.Sc. (Internet and Mobile Technologies) (Semester – IV)  
(Three Years Programme)

IMT-403 Mobile Application Development (iOS)

Time: 3 Hours  
Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

The student can use only Non–programmable & Non–storage type Calculator.

Section A
Introduction to Xcode and the iOS Simulator
Installation of XCode, Review the Objective C programming language, Compile and debug sample applications that illustrate iPhone features and focus on User Interface Implementation, Develop applications to practice generating an interface Objective C code

Discovering Swift and the iOS Playground

Inside Cocoa Touch
What Is Cocoa Touch, Exploring the iOS Technology Layers, Tracing the iOS Application Life Cycle, Cocoa Fundamentals, Exploring the iOS Frameworks with Xcode

Section B
Exploring Interface Builder
Understanding Interface Builder, Creating User Interfaces, Customizing the Interface Appearance, Connecting to Code

Model-View-Controller Application Design
Understanding the MVC Design Pattern, How Xcode Implements MVC, Using the Single View Application

Working with Text, Keyboards, and Buttons
Basic User Input and Output, Using Text Fields, Text Views, and Buttons

Handling Images, Animation, Sliders, and Steppers
User Input and Output, Creating and Managing Image Animations, Sliders, and Steppers

Using Advanced Interface Objects and Views
User Input and Output (Continued), Using Switches, Segmented Controls, and Web Views, Using Scrolling and Stack

Getting the User’s Attention
Alerting the User, Exploring User Alert Methods

Section C
Implementing Multiple Scenes and Popovers
Introducing Multiscene, Storyboards, Using Segues, Popovers, Universal Applications, and iPhones

Making Choices with Toolbars and Pickers
Understanding the Role of Toolbars, Exploring Pickers, Using the Date Picker, Using a Custom
Advanced Storyboards Using Navigation and Tab Bar Controllers  Advanced View Controllers, Exploring Navigation Controllers, Understanding Tab Bar Controllers, Using a Navigation Controller, Using a Tab Bar Controller
Navigating Information Using Table Views and Split View Controllers Understanding Tables, Exploring the Split View Controller, A Simple Table View Application, Creating a Master-Detail Application

Section D
Reading and Writing Application Data  iOS Applications and Data Storage, Data Storage Approaches, Creating Implicit Preferences, Implementing System Settings, Implementing File System Storage
Building Responsive User Interfaces Responsive Interfaces, Using Auto Layout, Programmatically Defined Interfaces
Using Advanced Touches and Gestures Multitouch Gesture Recognition, 3D Touch Peek and Pop, Using Gesture Recognizers, Implementing 3D Touch Gestures
Sensing Orientation and Motion Understanding Motion Hardware, Accessing Orientation and Motion Data, Sensing Orientation, Detecting Acceleration, Tilt, and Rotation
Application Tracing, Monitoring, and Debugging Instant Feedback with NSLog, Using the Xcode Debugger

Books and References:
1. iOS 7 Application Development in 24 Hours, Sams Teach Yourself (5th Edition), John Ray
2. Professional iOS Programming: Covers iOS 7, Peter Van De Put, Wrox Publications.
3. iOS 9 Application Development in 24 Hours, Sams Teach Yourself (Sams Teach Yourself in 24 Hours)
4. Programming iOS 9 Dive Deep into Views, View Controllers, and Frameworks Swift iOS 24-Hour Trainer Wrox Publication
5. iOS 9 Swift Programming Cookbook: Solutions and Examples for iOS Apps Vandad Nahavandipoor
IMT-404 E-Commerce and Prestashop

Time: 3 Hours

Max. Marks: 75

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

The student can use only Non–programmable & Non–storage type Calculator.

Section A

Section B
Business to Business, Business to Customer, E-Commerce and multilevel marketing, E-Commerce and Indian market, Future of e-commerce, Advantages and Disadvantages of E-Commerce marketing.

Ebay, Amazon, Flipkart business models.

Section C
E-Commerce and Dropshipping basics
Creating your online store, Getting traffic to your online store, Search Engine Optimization for your online store, Customer Service and Satisfaction

Section D
Prestashop
Introduction to Prestashop, Installation, Products display, Template, Catalog management, Product stock management, Payment method, Localization and Taxes, Shipping, User accounts, Analysis and Reporting, Why prestashop is better then other Php CMS

Books and References:
1. E-Commerce, Kamlesh K. Bajaj, Debjani Nag, Tata McGraw-Hill
2. The ABC’s of Ecommerce and Dropshipping Success, Robert H. Froyk
3. Prestashop 1.3 Theming - Beginner's Guide, Hayati Hashim
B.Sc. (Internet and Mobile Technologies) (Semester – IV)
(Three Years Programme)

IMT-405 Software Engineering and Testing

Time: 3 Hours Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

The student can use only Non–programmable & Non–storage type Calculator.

Section A

Section B
System Analysis: Principles of Structured Analysis, Requirement analysis, DFD, Entity Relationship diagram, Data dictionary.

Section C
S/W Design: Objectives, Principles, Concepts, Design methodologies: Data design, Architectural design, procedural design, Object -oriented concepts

Testing fundamentals: Objectives, principles, testability, Test cases: White box & Black box testing, Testing strategies: verification & validation, unit test, integration testing, validation testing, system testing

Section D
Selenium IDE
Install Selenium IDE and FireBug, Introduction to Selenium IDE, Creating your First Selenium IDE script, How to use Locators in Selenium IDE, How to enhance a script using Selenium IDE WebDriver
Introduction to WebDriver & Comparison with Selenium RC, Guide to install Selenium, WebDriver, Creating your First Script in Webdriver, Accessing Forms in Webdriver, Accessing Links & Tables using Selenium Webdriver, Keyboard Mouse Events, Uploading Files – Webdriver

Books and References:
2. Software Engineering, Roger S. Pressman.
3. Selenium Testing Tools Cookbook, Unmesh Gundecha
5. Selenium Simplified, Alan John Richardson
B.Sc. (Internet and Mobile Technologies) (Semester – IV)
(Three Years Programme)

IMT-406 Project Work based on Mobile Application Designing and Developing (iOS)

Time: 3 Hours  Max. Marks: 75
Teaching Methodologies
The Core Module Syllabus for Environmental Studies includes class room teaching and field work. The syllabus is divided into 8 Units [Unit-1 to Unit-VII] covering 45 lectures + 5 hours for field work [Unit-VIII]. The first 7 Units will cover 45 lectures which are class room based to enhance knowledge skills and attitude to environment. Unit-VIII comprises of 5 hours field work to be submitted by each candidate to the Teacher in-charge for evaluation latest by 15 December, 2019.

Exam Pattern:
End Semester Examination- 75 marks
Project Report/Field Study- 25 marks [based on submitted report]
Total Marks- 100

The structure of the question paper being:

Part-A, Short answer pattern with inbuilt choice – 25 marks
Attempt any five questions out of seven distributed equally from Unit-1 to Unit-VII. Each question carries 5 marks. Answer to each question should not exceed 2 pages.

Part-B, Essay type with inbuilt choice – 50 marks
Attempt any five questions out of eight distributed equally from Unit-1 to Unit-VII. Each question carries 10 marks. Answer to each question should not exceed 5 pages.

Project Report / Internal Assessment:

Part-C, Field work – 25 marks [Field work equal to 5 lecture hours]
The candidate will submit a hand written field work report showing photographs, sketches, observations, perspective of any topic related to Environment or Ecosystem. The exhaustive list for project report/area of study are given just for reference:

1. Visit to a local area to document environmental assets: River / Forest/ Grassland / Hill / Mountain / Water body / Pond / Lake / Solid Waste Disposal / Water Treatment Plant / Wastewater Treatment Facility etc.
2. Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
3. Study of common plants, insects, birds
4. Study of tree in your areas with their botanical names and soil types
5. Study of birds and their nesting habits
6. Study of local pond in terms of wastewater inflow and water quality
7. Study of industrial units in your area. Name of industry, type of industry, Size (Large, Medium or small scale)
8. Study of common disease in the village and basic data from community health centre
9. Adopt any five young plants and photograph its growth
10. Analyze the Total dissolved solids of ground water samples in your area.
11. Study of Particulate Matter (PM$_{2.5}$ or PM$_{10}$) data from Sameer website. Download from Play store.
12. Perspective on any field on Environmental Studies with secondary data taken from Central Pollution Control Board, State Pollution Control Board, State Science & Technology Council etc.
Unit-I
The multidisciplinary nature of environmental studies
Definition, scope and importance, Need for public awareness

Unit-II
Natural Resources: Renewable and non-renewable resources:
Natural resources and associated problems.
(a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
(b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
(c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
(d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
(f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
   • Role of an individual in conservation of natural resources.
   • Equitable use of resources for sustainable lifestyles.

Unit-III
Ecosystems
   • Concept of an ecosystem
   • Structure and function of an ecosystem
   • Producers, consumers and decomposers
   • Energy flow in the ecosystem
   • Ecological succession
   • Food chains, food webs and ecological pyramids
   • Introduction, types, characteristic features, structure and function of the following ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, ocean estuaries)

Unit-IV
Biodiversity and its conservation
   • Introduction – Definition: genetic, species and ecosystem diversity
   • Biogeographical classification of India
   • Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and option values
   • Biodiversity at global, national and local levels
   • India as a mega-diversity nation
   • Hot-spots of biodiversity
   • Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts
   • Endangered and endemic species of India
   • Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity
B.Sc. (Internet and Mobile Technologies) (Semester – IV)
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Unit-V

Environmental Pollution:
Definition:
- Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides

(8 Lectures)

Unit-VI

Social Issues and the Environment
- From unsustainable to sustainable development
- Urban problems and related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation
- Consumerism and waste products
- Environmental Protection Act, 1986
- Air (Prevention and Control of Pollution) Act, 1981
- Water (Prevention and control of Pollution) Act, 1974
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation
- Public awareness

(7 Lectures)

Unit-VII

Human Population and the Environment
- Population growth, variation among nations
- Population explosion – Family Welfare Programmes
- Environment and human health
- Human Rights
- Value Education
- HIV / AIDS
- Women and Child Welfare
- Role of Information Technology in Environment and Human Health
- Case Studies

(6 Lectures)
Field Work

- Visit to a local area to document environmental assets River / forest / grassland / hill / mountain
- Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems-pond, river, hill slopes, etc

(Field work equal to 5 lecture hours)

References:

2. Down to Earth, Centre for Science and Environment, New Delhi.
9. State of India’s Environment 2018 by Centre for Sciences and Environment, New Delhi
IMT-501: Game Development

Time: 3 Hours

Max. Marks: 75

Note:

1. Eight questions are required to be set giving equal weightage to all the units. The Candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non-programmable & Non-storage type Calculator.

Game Programming using C and C++
Introduction to technologies and drawing the game board, creating a real, playable game
Adding difficulty levels and other menu options
Changing the game board size and the block count
Adding undo/redo functionality and keyboard accelerators Designing a game using modules
MiniMax Game Trees
Chess Board
Representation

Object-Oriented Animation
Learn how to design a framework for doing animation--a foundation for many games and graphics engines.
An Introduction to Object Oriented Animation Frames, Layers and Layer Folders
The design of the animation engine

Introduction to Cocos2D-x
Cocos2D-x, Supported Platforms, Supported Languages, Main Features, System requirements
Editors, Installation and Testing

Modules
2D Graphics, Audio, Data Structures, Debugging, File IO, GUI, Handling User Input, Memory management, Network Physics, Scene Graph, Scheduler, Scripting, Threading, Sprite3D, Game Controller

Reference Book:
Jumping into C++ By Allax Allan,Cocos2d-X by Example Beginner's Guide, Roger Engelbert
IMT-502: Advanced Programming in Android

Time: 3 Hours  Max. Marks: 75

Note:
1. Eight questions are required to be set giving equal weightage to all the units. The Candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non–programmable & Non–storage type Calculator.

Android Studio Installation, install JDK, Install Android Studio (Windows), Android Studio Tour, Android Emulator, AVD in Android Studio, Hardware Device, Hello World Tutorial, Creating my first APP

Android Overview, Android Basic Blocks, Basic UI Elements, Strings.xml & message localization, Resources and Asset Files, Gradle Dependencies, Android Broadcast Intent and Broadcast Receiver, Debugging, Persisting Application State, Debug Logcat Errors, Text to Speech (TTS) and Speech to Text using google TTS.

RecyclerView, Adapter & ViewHolder, Fragments, Material Design Elements, Navigation, Working with my App, Adding Views Dynamically, Building Layouts for screen configuration changes, working with Custom Styles & Themes.

Android Hierarchical Navigation, Webview, Custom Views, Permission system, AsyncTask, Threading and Handlers, Using AsyncTask vs. Java Threads (with Handlers), Loaders, AsyncTaskLoader & CursorLoader, Background Services, Android Scheduling task.

Access Files in Assets, Access Resources, Save Data and Files, SQLite Databases, Content Providers, Loaders, Background Services, Access RESTful webservices with JSON and other formats.

Widgets, Notifications, Test and troubleshoot the individual components and your entire application, Getting Ready for Deployment, Publish on Play Store

Reference Books:
1. Android Cookbook, 2e – by Ian Darwin (Author)
4. Android Programming: The Big Nerd Ranch Guide (Big Nerd Ranch Guides), 2013 by Bill Phillips and Brian Hardy
5. Professional Android 4 Application Development, 2012 by Reto Meier
**IMT-503: Big Data and Analytics**

**Time: 3 Hours**

**Max. Marks: 75**

**Note:**
1. Eight questions are required to be set giving equal weightage to all the units. The Candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non-programmable & Non-storage type Calculator.

**Introduction to Big Data:** Databases and their evolution, convergence of key trends, unstructured data, web analytics, big data and marketing, fraud and big data, risk and big data, credit risk management, big data and algorithmic trading, big data and healthcare, big data in medicine, advertising and big data, big data technologies, introduction to Hadoop, open source technologies, cloud and big data mobile business intelligence, Crowd sourcing analytics, inter and trans firewall analytics.

**NoSQL Data Management:** Introduction to NoSQL, Types of NoSQL, aggregate data models, aggregates, key-value, document data models, relationships, graph databases, schema less databases, materialized views. Overview of MongoDB.

MapReduce, partitioning and combining, composing map-reduce calculations, MapReduce examples such as matrix multiplication.

**Hadoop:** Introduction to Hadoop, Data format, analyzing data with Hadoop, scaling out, Hadoop streaming, Hadoop pipes, Hadoop distributed file system (HDFS), HDFS concepts, data flow, Hadoop I/O, data integrity, compression, serialization, Avro file-based data structures, Map Reduce workflows, Section tests with MRUnit, test data and local tests – anatomy of Map Reduce job run, classic Map-reduce, YARN, failures in classic Map-reduce and YARN, job scheduling, shuffle and sort, task execution, MapReduce types, input formats, output formats.


**Reference Books**
2. Big-Data Black Book, DT Editorial Services, Wiley India
IMT-504 Practical based on Game Development

Max. Marks 50
B.Sc. (Internet and Mobile Technologies) (Semester – V)  
(Three Years Programme) 

IMT-505: Practical Based on Android Application Development

Time: 3 Hours  
Max. Marks: 75
B.Sc. (Internet and Mobile Technologies) (Semester – V)
(Three Years Programme)

MT-506: Practical – Hadoop, MapReduce, HDFS, MongoDB

Max. Marks 50
IMT-601: Industrial Training Based on Mobile and web Based Technology

Time: 3 Hours  Max. Marks: 400

1. A software module based on the work done in the entire course is to be developed.

2. The soft copy of the module shall be submitted to the College/Institute.

3. The software module shall be developed in groups, consisting of at most two students in a group.

4. The respective college shall depute guide(s)/supervisor(s) under whose supervision the software module shall be developed. The guide/supervisor shall clarify that the work done is original & authenticated. The certificate found to be incorrect at any stage shall attract the proceedings against all the stakeholders, as per the University rules.

5. The evaluation of the module shall be done as per the common ordinance of UG/PG w.e.f. 2012-2013 under semester system.